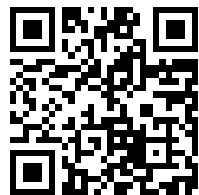

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THE JOURNAL OF THE ROYAL ARTILLERY



Vol. XLII. No. 9.

December, 1915.

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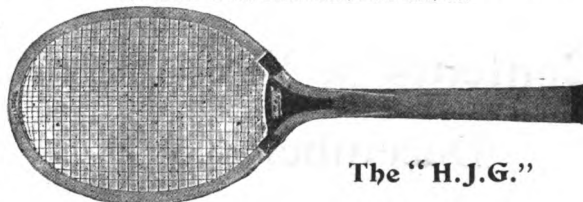
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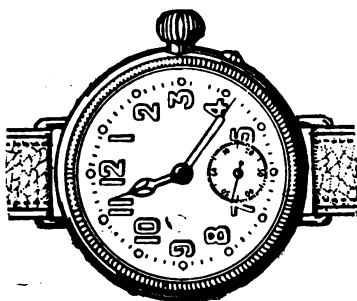


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SOME ASPECTS OF GREAT CAMPAIGNS—

THE CRIMEAN WAR.

BY CAPTAIN R. G. CHERRY, R.F.A.

INTRODUCTION.

WHILE the Crimean war is, perhaps, more full of thrilling incidents and heroic deeds than any campaign in history, yet, to the student looking for lessons and examples from a tactical or strategical point of view, this war is singularly barren of results. No one can read without a thrill of pride about the immortal charges of the Light and Heavy Brigades at Balaclava, or the desperate valour of the British infantry at Inkerman. But examples of brilliant handling of troops in battle, or of well-timed and well-concerted manoeuvres are few and far between. In the long years of peace that followed the Napoleonic wars, no new theories of attack or defence had been elaborated, and it may be said that strategy and tactics were both at a standstill. Further, the war itself did not bring forward any great commander, nor did it modify the existing views on the employment of troops in manoeuvre or in battle. At the same time the war has, like all other wars, distinctive features of its own, and during its course we are able to trace the value of some of the maxims now laid down in our field Service Regulations.

The brief diary here inserted may assist in the study of the campaign from the various points of view, which have been arranged so far as possible in chronological order :

Diary—

21 July, 1853. Russian troops cross the Pruth.

23 October, 1853. Turkey declares war on Russia.

30 November, 1853. Russian fleet destroys Turkish squadron at Sinope.

March, 1854. England and France declare war on Russia.

3 June, 1854. Austria backed by Prussia demands evacuation by Russia of Balkan principalities.

2 August, 1854. Russian troops withdraw.

7 September, 1854. Allied armies sail from Varna.

18 September, 1854. Allied armies land at Kalamita Bay.

20 September, 1854. Battle of the Alma.

- 26 September, 1854. British advanced troops seize Balaclava Bay.
- 17 October, 1854. First bombardment of Sebastopol.
- 25 October, 1854. Mentchikoff attacks British Camp—Battle of Balaclava.
- 5 November, 1854. Battle of Inkerman.

The primary objective.

In all campaigns it is essential that the side that assumes the offensive should have a clearly defined objective, and that this should constantly and continually be kept in view. No considerations whatever ought to hold good if they do not assist the attainment of this primary objective, and no operations should be attempted that might in any way tend to obscure the main issues of the campaign. The first military object of a commander should, generally speaking, be the defeat of the enemy's main army, for this alone can render possible the subjection of the will of the hostile nation. For a commander who is able to assume the initiative and act offensively, no better maxim could be found than that of Von Moltke, which was to "seek out the enemy's main forces, and when found, attack them." The defeat of the enemy's armies may prove sufficient to bring the opponent to ask for terms, as is shown by the campaign in Bohemia 1866 and in Manchuria 1904, but it may be necessary to invest and capture his capital, and so paralyse the government, trade, or food supply of the nation, before a favourable peace may be obtained. The Crimean war, however, is an exceptional case, and for that reason is of special interest.

In order to appreciate fully the action of the allies in invading the Crimea, we should first look at the causes of the war, and then at the operations that took place in the Principalities during the spring of 1854.

The first and chief cause of the war was the ambition of the Czar Nicholas, which expressed itself in designs upon the integrity of the Ottoman Empire. Constantinople with its magnificent harbours and its strong strategic position was a constant temptation to Russian ambition, which saw in it the key to commercial and strategic supremacy in the Eastern Mediterranean. About this time, the international situation appeared to favour Russia, as the young emperor of Austria was under an obligation to the Czar: the King of Prussia was his brother-in-law: Napoleon III had only recently ascended the French throne, and was not likely to wish to quarrel with any nation so powerful as Russia: England was believed to be engrossed in commercial enterprise, and might be placated with a share of the spoils. A dispute between the Greek and Roman monks in Palestine, the former being supported by the Czar and the latter by the French emperor, gave Nicholas an opportunity for picking a quarrel with Turkey. That this was his intention was made obvious by his action when the Sultan decided in favour of the Russian claims. The Czar then laid claim to a protectorate over all the Christian subjects of Turkey, and sent an army corps to occupy the Danubian Principalities as a method of enforcing his

claim. The great western powers, in their anxiety to avoid a quarrel, drew up the Vienna Note, which practically embodied the Russian demands. Turkey, however, insisted on certain reasonable modifications and, on their prompt rejection by Russia, declared war. The French and English fleets were sent to the Bosphorus as a warning that the allied powers could not tolerate a menace to the independence of Turkey: Russia's answer was to attack and destroy a squadron of Turkish light war vessels at anchor at Sinope in the Black Sea, whereupon England and France declared war. In the spring of 1854 Russia was ready for offensive operations from the Danubian Principalities, and prepared to invade Turkey. At this juncture Austria, supported by Prussia, took a hand in the game and mobilised an army of 50,000 on her eastern frontier, threatening to attack the Russian right flank, unless the troops were withdrawn. This was done, and neither Austria nor Prussia took any further steps. England and France, however, considered that they could not withdraw without taking stern measures to deter the Czar from a repetition of his threats against Turkey. An invasion of the mainland would effect nothing: the Russian armies would be constantly retiring on to reinforcements, and a repetition of the 1812 campaign would probably be the result. The most vulnerable, as well as the most accessible, part of the Russian Empire was undoubtedly the port of Sebastopol, as it was situated on a peninsula, isolated on the mainland, and at such a distance from the military centres that a long time must elapse before Russia could hope to bring her vast resources in men, arms, and ammunition, to bear on a campaign in that district. It was, moreover, most fitting that this port should be the object of attack, as it was the Russian naval base in the Black Sea, from it the fleet had issued to destroy the Turkish squadron at Sinope, and it was the place from which a naval attack on Constantinople would be based. It was hoped that the destruction of this port with its arsenals, its stores and the fleet that lay at anchor within it, would warn the Czar against further threats against Turkey. This, then, was the Primary objective of the allies, and their armies, having once landed, could not leave the Crimean Peninsula until their object was achieved. It was known that a field army was ready to oppose the expedition, and this army would have first to be defeated and driven either within or away from Sebastopol, before the fortress could be invested or attacked. But once this was done, every effort would have to be directed towards the prosecution of the siege, and none of the all-too-slender forces available for the expedition should be wasted in further enterprises against the enemy's field troops to the disadvantage of the siege. It was this consideration that influenced the French commanders Canrobert and Bosquet against acting offensively against the Russians at the battles of Balaklava and Inkerman. In their opinion every available man should be used to press forward the siege operations; and that their view was sound has been since shown by the risks and disadvantages encountered by the Japanese forces in Manchuria owing to their having a double primary objective—the siege of Port Arthur, and the concentric movement against the Russian field armies.

The whole-hearted and thorough manner in which the allied commanders conducted the siege, in spite of adverse pressure on the part of their governments, was not the least of the causes that led to its successful issue.

The command of the sea.

The interference of the English and French armies in the quarrel between Russia and Turkey was only made possible by the absolute command of the Sea. This permitted the landing of the allied contingents at Varna and the subsequent use of this port as a base for the operations in the Crimea. To an army planning an expedition overseas, the command of the sea gives the choice of a landing place, and of harbours and bases on which the army will depend for its supplies and reinforcements. At the same time, this command must be sufficiently assured, and risk of interference by hostile vessels of war must be practically negligible before an army can be entrusted to transports which are, of necessity, helpless and therefore invite attack. This brings into prominence the first duty of the fleet that is co-operating with a military expedition overseas. The fleet must detach a portion to take charge of the transports at the commencement of operations, and later on of convoys of ammunition, supplies and reinforcements. At the same time a portion of the fleet must so menace the hostile fleet as to draw its attention on to itself and away from the expedition.

Preparations for the invasion of the Crimea went on through the summer of 1854: troops and vessels were concentrated at Varna, where cholera soon broke out, causing great mortality and considerable delay before preparations were completed. On September 7th the expedition started: the French and Turkish troops were conveyed partly in transports and partly on their men-of-war, but the British resources proved superior to those of their allies and they were able to convey the fighting troops in one flotilla of steamers, while the battle squadron was free to engage the hostile fleet with superior numbers should it attempt to leave the protection of Sebastopol and make a dash for the transports. The course taken by the expedition to the first rendezvous, a point forty miles west of Cape Tarkran, exposed the right flank to the Crimean coast. The opportunity thus afforded to an enterprising naval commander at Sebastopol of doing considerable damage was not taken and the armament arrived safely on September 9th and remained at anchor while the allied commanders Raglan and St. Arnaud, escorted by a man-of-war, made a reconnaissance of the coast line on either side of Sebastopol, and selected a landing place at Kalamita Bay, a few miles north of the Bulganak river. Here the disembarkation took place, without opposition on the following days. Another advantage gained by an army through the possession of the command of the sea is the secure protection of one of its flanks, should it elect to march along or close to the coast. Part of the fleet can keep pace with the army, and its powerful guns can out-flank and out-range hostile artillery, while part can precede it and, by the occupation of harbours, secure advanced bases on the proposed line of march. When the

allied armies moved south from Kalamita Bay, the fleets protected their right flank, and at the battle of the Alma secured it against counter-attack, and gave them the opportunity (which they did not take) of manœuvring to their left, and, by outflanking the Russian defensive position, compelling them to retreat or fight with their backs to the sea. After the battle, detachments from the fleet moved on, some to watch the harbour of Sebastopol, where on September 23rd they saw seven Russian vessels sunk to block the entrance: others to Balaclava Bay against which they opened fire on the approach of the British advanced guard. Another way in which a fleet, having command of the sea, can co-operate with the expeditionary force, is by cutting off the enemy's maritime communications and blockading his fleet. Especially is this co-operation useful when the objective is a hostile harbour or arsenal, which cannot be blockaded effectively without assistance from the fleet. In the Crimean war it was essential that the Russian fleet should be "bottled up" in Sebastopol, as the allied lines of communication ran from Balaclava and Kamiesh Bays across the Black Sea and were peculiarly open to attack. The first duty of the allied fleet was, therefore, to render the passage of the Black Sea secure, and this could only be done by providing against the possibility of a raid on the part of the Russian fleet in the harbour. Actually on September 20th, the Russian admiral Korniloff proposed issuing from the harbour and attacking the enemy's flotilla, in the hope of doing considerable damage and rendering their communication insecure. His advice, however, was not followed and the Russian fleet made no attempt during the siege to raise the blockade by sea. Again, the command of the sea confers on the fleet the power of actively co-operating in the attack of the land forces. This can be done in two ways: by landing a naval contingent, which forms part of the main army, and by assisting the attack on a position or fortress by fire from the ship's guns. In both these ways did the allied fleet co-operate with the armies during the operations round Sebastopol. Marines were landed and took the place in the investing line: the British Marines, 1000 strong, were posted on the hills above the harbour on the right of the line, and guns were landed from the ships and mounted there. In addition naval guns were placed in several of the siege batteries and were manned by sailors. The first attack on the fortress took place on the 17th October, and the allied generals asked the fleets to co-operate by bombarding the defences from the sea. It was decided that the fleets should steam in to close range and engage the batteries facing the sea, at the same time that the land forces bombarded the town. The results that might reasonably be expected were not commensurate with the risks that the fleet would most certainly run. A desultory bombardment by the fleet could have but little effect on the land encounter, while serious casualties to the ships might embolden the Russian fleet to attempt enterprises against the allied convoys. A feint attack by the fleet would have been sufficient to keep the Russian sea-batteries manned, and the ships might have steamed in to co-operate in an assault with effect, in which case risks would have been justified. The action that the fleet actually took was to steam in and

bombard the forts: the damage suffered by them was considerable, and that effected by them but slight. The fleet did not attempt again to co-operate in this manner, but confined themselves to guarding the harbour, protecting the communications and landing men and guns.

Co-operation in the attack.

Among the principles laid down in Field Service Regulations Part I. there is one of which the value was emphatically shown in the great battles of this campaign. It is considered to-day, and the maxim has always held good that "all leaders, down to those of the smallest units, must endeavour to apply at all stages of the fight the principle of mutual support." Thus the commander-in-chief of an army, acting in conjunction with the army of an allied nation, has the same duty of co-operation with his ally as the company commander who has to assist with fire the movement of troops in his vicinity.

Two examples in this war illustrate the necessity of applying this principle of co-operation and mutual support.

(a). The allies at the battle of the Alma.

To appreciate the actions of the English and French commanders at this battle, it will be necessary to look at the topography of the Russian position, and to consider the allied plan of attack.

Mentchikoff's force of 35,000 infantry, 3600 cavalry and 96 guns were holding the high ground south of the river Alma with the object of disputing the allied advance (see Map I). The extent of the position from Kourgani Hill on the east to the sea was about $5\frac{1}{2}$ miles, but only 3 miles were held in force, the plateau between Telegraph Hill and the sea being practically unoccupied. This plateau falls abruptly to the valley through which the Alma runs, and west of the Post Road there were only three narrow tracks that led from the valley to the top. The plateau was perfectly open and could be swept by fire from the guns of the allied fleet. East of the Post Road the ground rises in long easy slopes to the Kourgani Hill, which was the key of the Russian position, and was strongly held. No steps were taken to block the tracks leading up to the position or to establish earthworks dominating them. On the forward slopes of Kourgani Hill, two redoubts had been dug: the western and more important one was called the Great Redoubt, and the other the Lesser Redoubt. The alternative methods of dealing with the Russian force were three. The allied armies could either concentrate on their right, and, assisted by the guns of the fleet, capture Telegraph Hill, and from there enfilade Kourgani Hill. This would compel Mentchikoff to retire, and would probably cut him off from Sebastopol. However, he would then fall back on Simpheropol and, based on that town, could take up a strong flanking position that would menace the allied march on Sebastopol. The next alternative was to concentrate on their left and turn the Russian right: in which case the right of the allies would rest on Bourliouk and the Russian front would be engaged while Kourgani Hill was turned by the allied left. There was no risk in leaving the plateau between the armies and the

fleet because the guns of the latter could prevent any Russian force from making a counter-attack from the direction of the plateau and Almatamak against the allied right. A decisive victory against the Russian right would tend to press them back to the sea and on to the guns of the fleet. The third alternative, which was the one adopted, was to make the decisive attack against the Russian centre, assisted by a turning movement from the west across the plateau. It will at once be seen that the complete success of this plan, which was such as necessitated the wide separation of the allied armies, would depend on the close co-operation and mutual support rendered by each army to the other. On the morning of the 20th the allied armies arrived in front of the Russian position and halted, while Raglan and St. Arnaud made a personal reconnaissance of the ground, and formed their plan of attack. The first forward movement was made by Bosquet's division, which was on the right of the French army. Followed by the Turks, one brigade crossed the river near its mouth and ascended the plateau: having got there, it found itself two miles from any Russians and did not take any part in the battle. The other brigade, followed by the artillery of Bosquet and Canrobert's divisions, passed up the road leading through Almatamak. Canrobert's infantry ascended the plateau by the track leading up from the farm, and Prince Napoleon's division formed up opposite the road that led to Telegraph Hill. The remaining French division under Forey, was in reserve. The British moved down to the river in column formation, the second division resting on Bourliouk with the Light Division on its left. Behind them were the Third and First Divisions, and the Fourth Division was echeloned on the left rear. The left flank was protected by the Light Cavalry Brigade. The columns deployed into line when fire was opened on them by the 14 Russian guns in the great Redoubt. The British, according to the plan agreed upon, were to attack the Russian right centre as soon as the French turning movement made itself felt. However, at this point co-operation failed, for the French troops on the extreme right were too far off to be of any use, and Canrobert was hanging back on the edge of his plateau waiting for the arrival of his artillery, which was following that of Bosquet up the Almatamak road. Arnaud, fearful of being caught astride the river, asked Raglan to attack at once. Thus the two British divisions were to be committed to a frontal attack against a strongly-posted enemy in order to draw away opposition from the troops who had the easier task to perform, namely the turning movement. The first British attack was made without any assistance from their allies. Field Service Regulations says that "The full power of an army can be exerted only when all its parts act in close combination." That neglect of this principle is disastrous was shown by the partial failure of the first attack. The two divisions in the first line crossed the river and ascended the slopes, suffering heavily from artillery fire from the Causeway and the Great Redoubt. The second division was checked and unable to advance, but the two right battalions of the Light division after suffering heavy losses, gained the great redoubt and captured two of the fourteen big guns that had been firing from

it. It was at this point that the whole army should have combined to hold the ground won, and, by drawing in all the Russian troops, made the blow decisive. The divisions in second line should have reinforced the attacking troops and prolonged their line to the left, while the artillery should have been placed under single control and used to support the attack at its decisive point. Raglan had, however, taken the extraordinary course of riding with his staff to a knoll well within the enemy's line of defence, where he could certainly see the whole battlefield, but where he was completely out of touch with his army. The result was that there was no unity of control: the artillery was brought into action by battery commanders and used haphazard by them against such targets that presented themselves conveniently: the divisions in second line were not far enough forward to make good the great redoubt: in addition, the two left battalions of the Light Division were brought to a standstill by the menacing attitude of Russian cavalry and infantry on their left flank. Consequently, the troops who had stormed the great redoubt finding themselves unsupported, threatened by fresh troops, and suffering heavily from artillery fire, gave way and descended the hill, carrying with them some of the leading troops of the first division, who had crossed the river to come to their support. It was about this time that Canrobert's division was attacked by a column of eight Russian battalions, which drove the French to the edge of the Plateau, but was itself driven back by the fire of the French artillery which arrived at the critical moment and took the column in flank. At this crisis Raglan managed to get up to him two field guns, and with them enfiladed the Russian batteries and brought a rapid fire to bear upon the Russian reserves. This diversion gave time for the British second line to advance, and the first division, with the second and third on its right, advanced and drove the Russian right and centre from their position. The cavalry and horse artillery also moved up on the left of the line and their guns dispersed the Russian reserves in this part of the field. Simultaneously the French occupied Telegraph Hill without much loss, and Mentchikoff drew off his troops in good order. St. Arnaud refused to pursue. This victory was really won by the personal valour of the troops engaged and in spite of the bad tactics employed. The French turning movement which was to have assisted our advance, by its dilatoriness only precipitated matters: the British divisional generals were left without superior direction and had to act by themselves, with the result that the absence of cohesion in their movements nearly led to a reverse.

(b). *The Russians at Inkerman.*

The battle of Balaclava on October 25th had exposed to the Russians the weakness of the allied position before Sebastopol, and it was seen that the British left, resting on the Home Ridge (Map II) was dangerously exposed. The general situation at this period favoured an offensive movement on the part of the Russians: the allies were tied down to their positions in front of Sebastopol, which was well-provisioned and strongly garrisoned. Mentchikoff's field army had been re-inforced and was in a good condition to take the

field. At the same time the Allied armies had improved their siege works and were actively making arrangements for another attack on the fortress. It became then a question as to which side would be ready first to deliver an offensive blow. By November 4th the Russian forces had reached a total of something about 110,000 men all told, facing the 65,000 of the allies. The Russian plan was that a column of infantry should issue from the fortress and combine in an attack upon the British left with another column from the field army on the Inkerman heights. The troops under Gortchakoff, who were on the Fedonkine heights facing the British right, were to combine by threatening the right and centre of the allied position. The ground, over which the attack was to be delivered, consists in a long narrow ridge extending from Shell Hill over the Home Ridge to the windmill at the road junction. Up to it run deep ravines from the north and west, the sides of which are covered with low dense scrub and boulders. The attack was to commence at dawn, and this fact and a study of the topography of the ground (Map II) will show at once that very careful arrangements would be necessary in order to ensure co-operation between the various assaulting columns, and correct timing of the attack. The orders issued by Mentchikoff were, however, very vague; the effect of them was as follows: Soimonoff with 19,000 infantry and 38 guns was to leave Sebastopol before dawn at the mouth of the Careenage ravine; at the same time Pauloff with 16,000 infantry and 96 guns was to cross the Tchernaya at the bridge and advance up the St. George ravine and Volovia gorge and join Soimonoff's column. Gortchakoff's troops were "to support the general attack by drawing the enemy's forces towards them, and to endeavour to seize one of the heights of the plateau." The Sebastopol garrison was to cover with fire the right of Soimonoff's column.

This plan was further complicated at the last moment by detailing General Dannenburg to take over the command of the two assaulting columns as soon as they joined. This alteration was made too late for the commander to issue orders for the combined action of the two columns. The battle was begun by Soimonoff, who left the fortress before daylight, sent his artillery on to Shell Hill and commenced his attack in three lines of columns at 7 a.m. without waiting for Pauloff. The attack was met by the outposts of the 2nd Division who fell back fighting on to their main body, which was sent forward in dribblets to reinforce them by Pennefather. The morning fog concealed from the Russians the fact that they outnumbered their opponents by nearly ten to one, and the desperate charges of the British drove back this force and pursued it to Shell Hill. Pauloff's column had meanwhile come up on the left, and formed up opposite the Fore Ridge: as the four leading battalions approached, they were charged by two companies and were, after desperate fighting, driven off the field. The remainder were charged by one regiment and driven back down the slopes of the Volovia gorge to the river. This was the end of the first attack, in which 35,000 infantry, supported by an overwhelming artillery, had been routed by less than 4000 men with 18 guns. The Russian failure may be traced to the fact that no precautions had been taken to

ensure that "attacks intended to be simultaneous should be so in reality." Had the two columns established communication behind Shell Hill and advanced on both sides of the ridge in one determined concerted movement, it is difficult to see how the attack could have failed. The next phase in the battle began when General Dannenburg took over the command of Pauloff and Soimonoff's reserves, in all 19,000 infantry and 90 guns; of these 10,000 were massed in the Quarry ravine and advanced against the British right and centre, while the guns from Shell Hill swept the Home Ridge. By this time Gortchakoff's force of 20,000 was in position, with their right extending opposite to the British right. Meanwhile the 2nd Division had been re-inforced by the Guards and the artillery of the First Division. Cathcart's fourth division was also coming up on the right. The first attack was made against the sandbag battery and the Fore Ridge, and desperate hand-to-hand struggles ensued in which the British held their ground with difficulty. Cathcart tried to ease the pressure by descending the eastern slopes and attacking the Russians in flank with 400 of his brigade followed by some of the Guards. This counter-attack met with some success at first, but was taken in reverse by a body of Russians who had taken advantage of the thinning of the defensive line to pass along between the Barrier and Sandbag battery. Cathcart was killed and his troops only regained the defensive line after suffering heavy losses. At this crisis a French battalion, the 6th Leger, came up and charging the Russians in flank drove them down the slopes. All this time Bosquet's division, which was nearest to the Home Ridge, was watching Gortchakoff, who made no forward movement; but by 8.30 Bosquet had detached some 1500 infantry and 12 guns to assist the British right.

The next Russian attack came from the Quarry Ravine against the British centre and left, and met at first with some success, as the leading battalions gained a footing on the head of the Carenage ravine and the main body passed the barrier and nearly succeeded in establishing itself on the Home Ridge, but were driven off by the French 7th Leger assisted by a gallant charge in flank by Col. Daubeney with 30 men. By 9.30 the allied line was further reinforced and two 18 pounders and two French horse batteries arriving at this time began to neutralise the Russian artillery fire. Still Gortchakoff made no movement, and after several more desultory attacks, in which the fighting was still most severe, Dannenburg withdrew his troops. There was no pursuit as Canrobert, the French commander-in-chief, regarding the capture of Sebastopol as the chief objective, was disinclined to divert any more men than he could help from the siege. F.S.R. states that "In order to prevent the enemy from thinning his line so as to re-inforce the point against which he expects the decisive attack will be directed, it will be absolutely necessary for the troops, to whom the role of wearing down the enemy's resistance is allotted, to act with vigour. No half-measures will succeed. The enemy must be deceived, and this will call for as much self-sacrifice and devotion on the part of these troops as will be required from those taking part in the decisive attack." It was in this duty that Gortchakoff failed so utterly. His task was not

MAP I

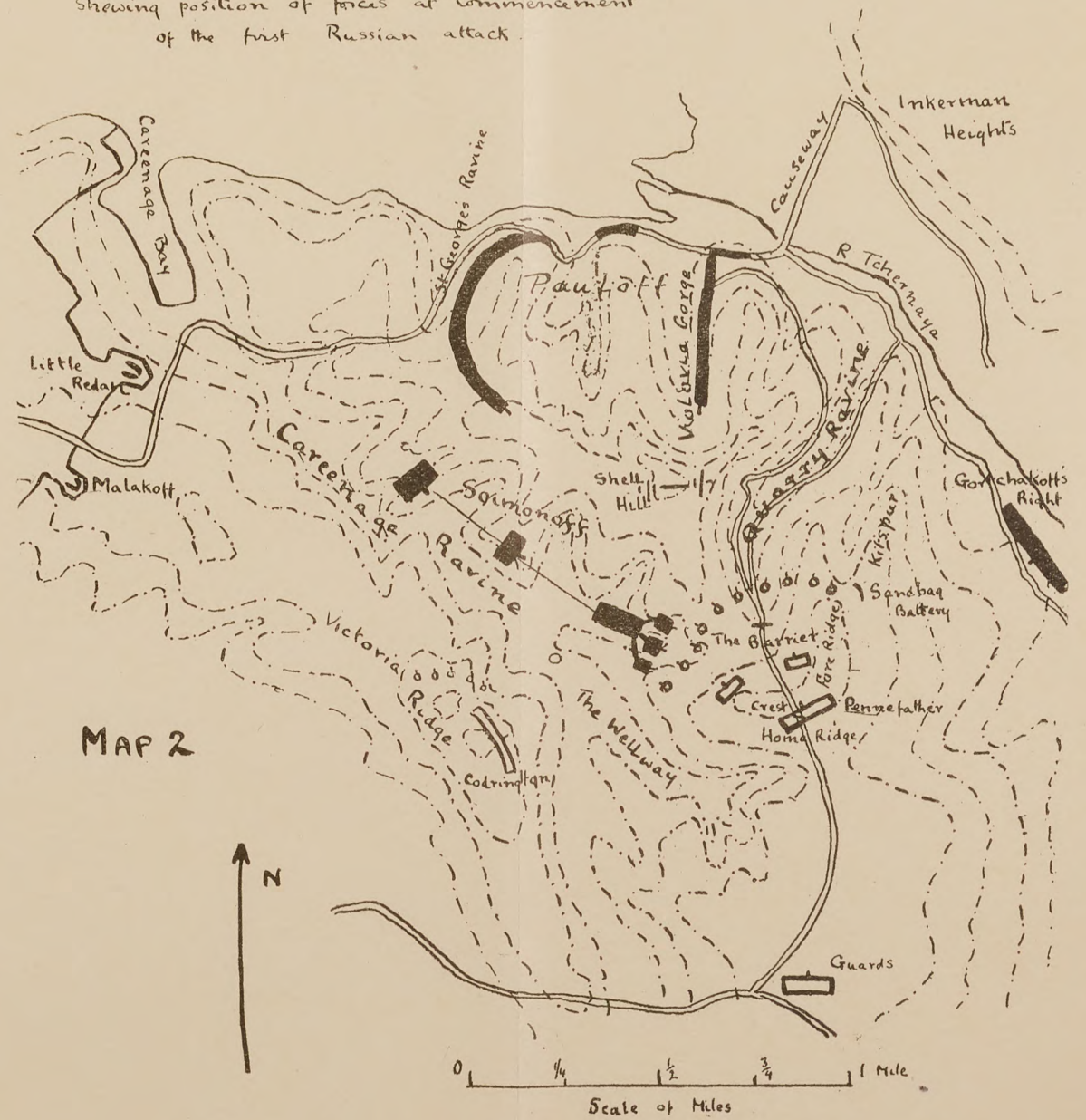
Battle of the Alma

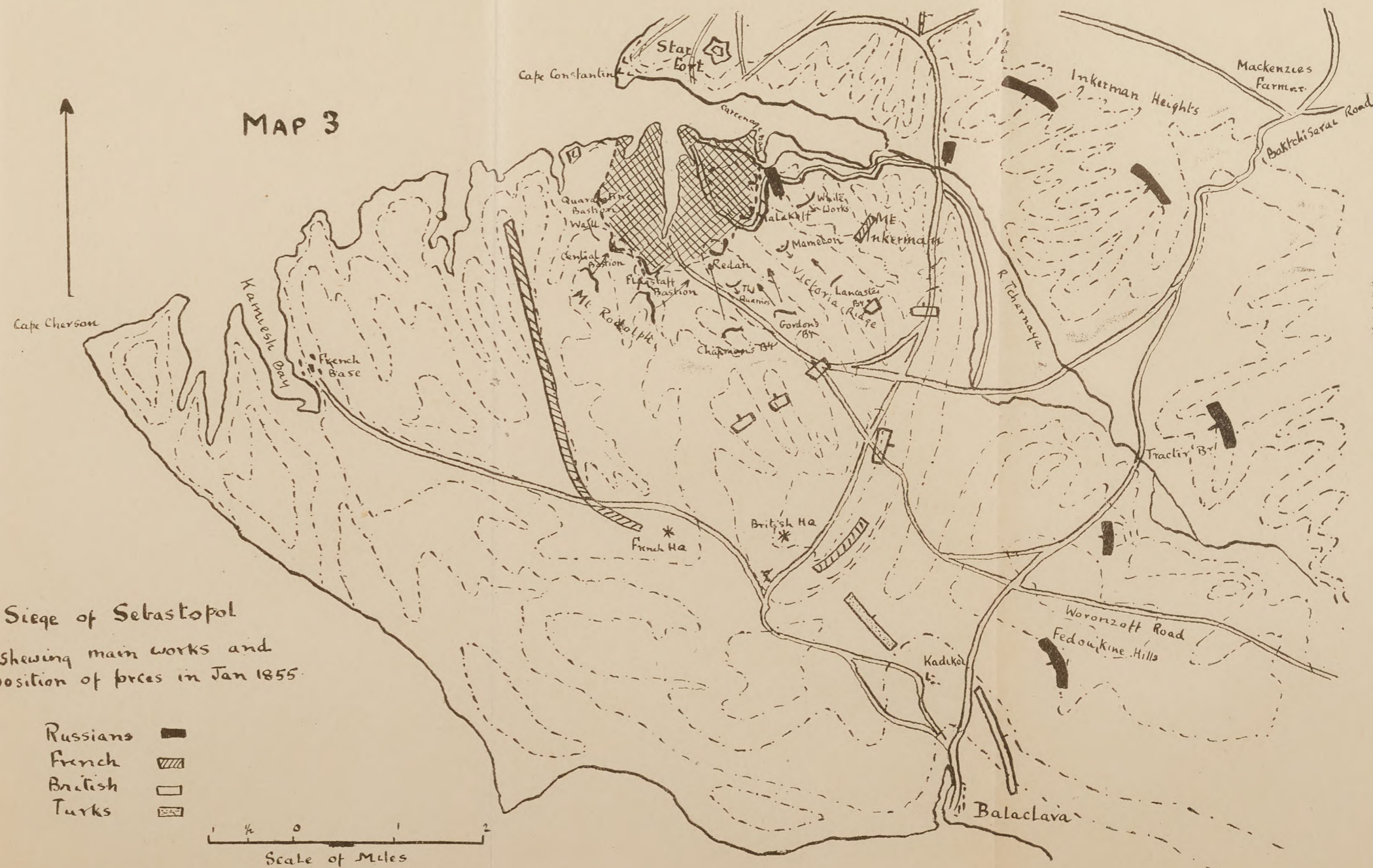
showing position of forces at commencement of the first British attack.



Battle of Inkerman

Shewing position of forces at commencement
of the first Russian attack.





altogether easy ; his orders were ambiguous, and he had some excuse for hesitating to attack a commanding position without definite orders to do so. An assault against the heights held by Bosquet would have to be pushed home if it was to pin the French to their ground : heavy losses would undoubtedly have been incurred, but no price could be too high that would have ensured the success of the main attack. Had Gortchakoff boldly attacked the French, Bosquet could not have re-inforced the British at all, who would probably have been driven back when Cathcart was defeated. That Dannenburg expected Gortchakoff to attack is evident by the persistence with which he attacked even after the balance of strength was beginning to turn against him. A resolute attack on the attenuated French position as late as 10 o'clock would have paved the way for a concerted advance against the British right, with fair prospect of success. The Russian failures on this day, in spite of their tremendous numerical superiority, point to the absolute necessity of intimate co-operation between various bodies in the attack. Careful study of the ground and careful estimation of time and space is necessary to ensure the correct timing of the attacks, and to pin the enemy to his ground, so that he cannot re-inforce threatened points. This is the great lesson to be gained from this battle which is otherwise only remarkable for the hard fighting and the almost incredible gallantry on the part of the slender British forces.

Conclusion.

This war has now been considered with reference to some of the maxims laid down in Field Service Regulations, which hold good in spite of the modifications in strategy and tactics. Great skill in either of these branches of the science of war was not shown, and the greatest lesson that this campaign conveys, in common with so many other campaigns in recent and ancient history, is that "above all, a firmer determination in all ranks to conquer at any cost is the chief factor of success."



A ROUGH METHOD OF CALCULATING AT THE BATTERY THE RELATIVE RANGE OF CONSECUTIVE ROUNDS.

BY 2ND LIEUT. W. M. BOCQUET, R.G.A.

THIS method depends on the measurement of the length of time between the sound of the gun firing and the sound of the shell-burst.

This interval is measured in the battery by means of a stop-watch. It is made up of two factors:—

- (1). The time of flight of the shell.
- (2). The time taken by the sound of the shell-burst to reach the battery.

Consequently the approximate variation in the range coinciding with the variation in this time interval can be calculated from the range-table.

For example:—

Range.	Time of flight.
9000 yds.	31'98 secs.
9100 yds.	32'57 secs.

Assuming that the range is 9000 yds., then the interval between the two sounds will be

$$31'98 \text{ plus } 24'06 = 65 \text{ secs. approximately}$$

(Taking the average speed of sound as 374 yds. per second).

Then using '59 sec. (the difference between the times of flight of the ranges 9000 yds. and 9100 yds. respectively) as the approximate variation in the time of flight for each variation of 100 yds. in the range, and 267 sec. as the time taken by the sound to travel this 100 yds., we have '59 plus '267 = '857 secs. variation in the time interval for each 100 yds. variation in the range.

Or, for each variation of 1/5th of a second in the time an increase or decrease in the range of 23 yds.

Put in the form of a simple formula it may be stated that where

X = Range in yards.

Y = Time of flight for Range X.

Z = Time of flight for Range X plus 100.

A = Total length of time interval in seconds.

B = Variation of range in yards equivalent to 1/5th of a second variation in time.

Then
$$A = Y + \frac{X}{374}$$

and
$$B = \frac{20}{Z - Y + '267}$$

This method cannot of course be considered very accurate owing to the means employed but may be of some assistance taken in conjunction with other methods of observation.

OVERHEAD CONCEALMENT FOR FIELD GUNS.

BY LIEUT.-COLONEL C. HOLMES WILSON, R.F.A.

THE advantage of screening guns has been forcibly brought forward during the present war. This applies more to the need for overhead concealment from aircraft than to any other form of cover. Under the circumstances, the following device, which has been invented by Major Walker, 1st Ayrshire Battery, 2nd Lowland Brigade, R.F.A., may prove of interest to readers of "The Journal." It is briefly, a net supported by poles, which covers both gun and wagon. When erected, the net is covered with leaves or twigs gathered from neighbouring trees and bushes. All depends on making the screen harmonise with its surroundings so that it cannot be observed from above. For instance in a grass country, grass would be used, in a desert, scrub collected from the vegetation in the vicinity of the position. The results achieved, working on these lines, have been remarkably good, and airmen knowing the locality have been completely baffled in their attempts to locate the positions of the guns. The specification of the outfit for each gun is briefly as follows:—

One large net 30 feet by 20 feet, 2 inch mesh ; for overhead side and rear cover.

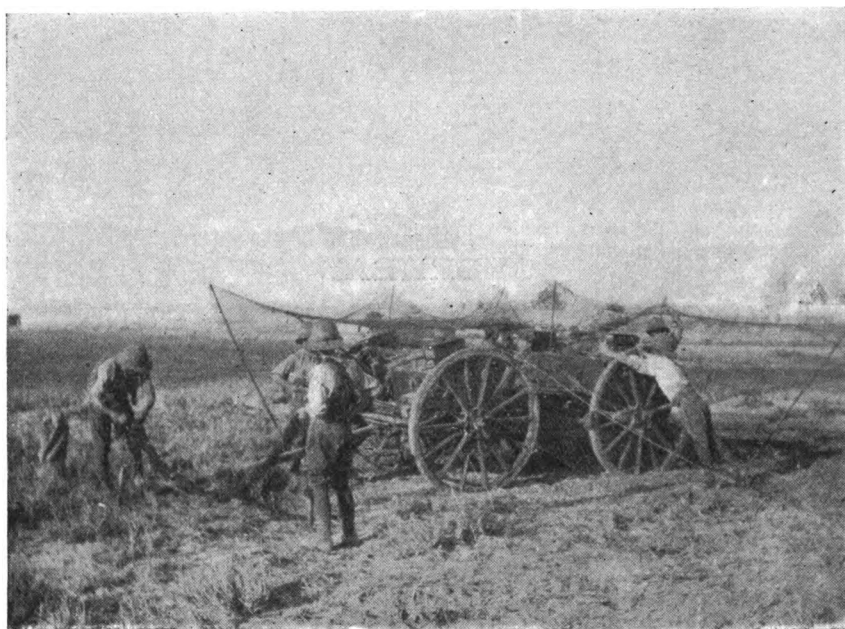
Two small nets 15 feet by 10 feet, 2 inch mesh : for use in front when there is no time to construct a parapet.

7 bamboo supports 8 ft. 6 in. in length ; each support made in two lengths and fitted together by a socket joint.

The large net is threaded at 5 feet intervals crossways and lengthways by light ropes which are attached to guys and pegs on all sides except the front.

The nets and pegs are carried in a service kit bag.

In the two photographs, the first shows the net being placed in position ; the second the finished article covered with brushwood.



Photograph No. 1.—The net being placed in position.



Photograph No. 2.—The net in position covered with brushwood.

CO-OPERATION BETWEEN ARTILLERY AND INFANTRY IN THE GREAT WAR.

BY BRIG.-GENERAL F. G. STONE, *psc.*, R.A.

(A Lecture delivered at the Royal Artillery Institution,
on Thursday, 25th November, 1915).

Brig.-Genl. W. F. Cleeve, Commandant R.M. Academy, in the Chair.

CHAIRMAN.—Ladies and Gentlemen I have much pleasure in introducing Brig.-General Stone, who will lecture to you this evening on the very important subject of Co-operation between Artillery and Infantry in the Great War. (Applause).

The Lecturer:—

1. Whenever a Subordinate Artillery Commander is allotted a task necessitating co-operation with a certain force of Infantry, whether he is placed under the orders of the commander of that force or not, it becomes his duty to open communication with its commander, reporting to him in person, if possible, in order to obtain full information as to the character of the operation which he is to support and as to the proposed method of its execution. F.A.T. Sec. 153. para. 7. I.T. Sec. 121 para. 14.

2. A personal exchange of views between subordinate infantry and artillery commanders is likely to produce the best results in a combined tactical operation. If unable to remain in the vicinity of the infantry commander the artillery commander should be represented by an officer. F.A.T. Sec. 248 para. 2. I.T. Sec. 121 para. 14.

3. It may be possible to arrange direct communication between the artillery commander and advanced observation posts, with a view to keeping him informed as to the progress of the attacking infantry and the effect of the artillery fire. F.A.T. Sec. 248 para. 4.

4. For the purpose of directing and controlling the fire of his batteries, the information that is of primary importance to an artillery commander is, firstly to know exactly where the infantry that he is supporting is, from time to time: secondly, what is its immediate objective: thirdly, what is it that prevents it from attaining its object. F.A.T. Sec. 153. I.T. Sec. 121 para. 14.

5. The comparative effect of fire from different portions of the enemy's position is however difficult to estimate from the artillery positions. The establishment of advanced observation posts may therefore be necessary to watch the situation generally to obtain information from one infantry commander, and to report to the artillery commander concerned. F.A.T. Sec. 153 para. 11.

No. 9. Vol. XLII.

The principles enumerated in the Training Manuals, published, be it noted, before the war, have stood the test of this extraordinary war, in a truly remarkable manner: this is the highest testimony to their soundness, and to the ability of the compilers of the Manuals which could be offered.

There has been a noticeable difference in different divisions in respect to the training of artillery and infantry in co-operation: in the six divisions of the original Expeditionary Force it was probably as satisfactory as peace training could make it, and well suited to the conditions which were met with early in the war, the weak point usually being that comparatively few infantry commanders at that time realised fully that co-operation, in order to be complete, required equal initiative on the part of the infantry as on the part of the artillery; this failure where it existed, was soon remedied by force of circumstances as the campaign progressed and the perfection of development was ultimately reached in the protracted trench warfare to which we have now become so accustomed as to regard it almost as the normal condition of affairs.

There were other divisions composed of regulars, the units of which were collected from various sources, and which had no previous existence as complete formations possessing the cohesion which a common divisional existence and training would have given them; these suffered in efficiency proportionately, since co-operation between the artillery and infantry, although more or less understood by commanding officers of both arms, could not, in the nature of things have been practised as between those officers to a sufficient extent to establish that mutual confidence and common doctrine which should prevail in a division which has been trained as a complete formation before proceeding on Active Service.

Perhaps the best results were obtained in some of the divisions of the New Army which were fortunate enough to have a Major-General from the front placed in command at an early stage who carried the training through to the finish and commanded the instrument of his own creation in the field; if in such a division the Brigadier Generals of artillery and infantry, as well as the commanding officers of artillery brigades and infantry battalions were holding their respective commands for three months or more prior to going abroad, it became possible to establish the closest support between the two arms, permeating down through battery and company commanders to the subaltern officer. Since we are more concerned now with the training of new divisions than with anything else, it will be profitable to trace the steps through which the evolution of perfect co-operation may best be directed in a new division. Under present conditions each artillery brigade and battalion of infantry will probably have been raised by the Mayor of a town, each in a separate centre, these scattered units will usually be collected into a division within two months of their being called into existence, but that does not imply that they have had two months training—far from it; if the O.C. is a wise man he will get through vaccination and inoculation in those two months and as officers and men are dribbling in all the

time, it is obvious that whatever military training has been imparted during that time has only been received in full measure by those who joined in the first week, and in a steadily diminishing ratio thereafter, until the last batch of recruits is reached, and the zero point of training. When these units therefore join their divisions there will be a period of another two months during which they are organised for training on scientific lines, specialists selected, courses for officers proceeded with and a certain amount of cohesion gradually introduced into each unit as a fighting machine. During this period co-operation between artillery and infantry can profitably be commenced by means of staff rides and combined tactical or trench warfare exercises on a small scale, each artillery brigade being associated with an infantry brigade for the purpose, it being understood that the same grouping will be normal throughout the life of the division whether the association of the two arms is for billeting purposes or for a distinct tactical operation under one commander. (F.A.T. Sec. 153 para. 6), or merely for purposes of mutual co-operation, as will usually be the case in trench warfare; in either case the subordinate artillery commander must get into personal touch with the infantry commander in order to obtain full information as to the character of the operation that he is to support and as to the proposed method of its execution. (F.A.T. Sec. 153, para 7).

During brigade training of the infantry the affiliated artillery brigade and a company of Royal Engineers should be grouped one day in the week, under the command of the Infantry Brigadier; on these occasions the G.O.C. Divisional Artillery will give all the help he can in the way of advice to the Infantry Brigadier without interfering in his command; he will on such occasions in the field wear an umpire's badge and act as Artillery Staff Officer of the G.O.C., he should take the opportunity of closely watching the handling of the artillery brigade by its own commander and particularly insist on the necessity of the artillery brigade commander receiving the earliest possible intimation of the group commander's intention and outline of dispositions to achieve it, so that the artillery brigade commander may be able to get his orders out while the group commander is dealing in detail with the infantry. He must also insist upon the artillery brigade commander being always at group headquarters, or in the event of his temporary absence, leaving his Adjutant to represent him, after informing the group commander why and for how long he wishes to be away from headquarters.

If the exercise is in the nature of trench warfare the group commander's shelter will always have the shelter for the artillery brigade commander alongside.

Seeing that the time is short, tactical exercises under the group commander should be devoted primarily to the execution of a set piece in attack; success depends so largely on accurate timing and what may be termed the "drill" of the attack, that it is essential to practise every detail until perfect. The group commander with the assistance of his artillery commander will draw up a programme somewhat on the following lines:—

An artillery staff officer (probably the adjutant or orderly officer) will go forward with the infantry advance, taking telephone line with him to communicate with artillery head-quarters. He will carry out the duties mentioned in paras. 3, 4, and 5, acting as observation officer first, and liaison officer subsequently. Each battalion head-quarters in the attack will similarly carry forward a line to communicate with group head-quarters. The artillery will support the attack under the orders of the artillery brigade commander who is kept informed of progress in front by his staff officer. When a line is reached by the infantry attack beyond which no further progress can be made, each battalion commander thus held up will ask for help, it may be arranged beforehand that the single word "help" implies that further advance will not take place until a predetermined period of intense artillery fire has been completed.

The group commander may have two battalions in firing line, and may receive this message from one battalion at 10.30, and without waiting for the other, decide at once to reply. "Intense fire 10.35" which by pre-arrangement signifies that the enemy's front trench will be exposed to intense artillery fire for 10 minutes, from 10.35, to 10.45; the officers commanding battalions must utilise this period in getting within charging distance of the trench, then, if necessary, lying down and awaiting the hour of 10.45, upon which they will dash in at the same time as the artillery fire is lifted by pre-arrangement to curtain fire at 300 yards additional range for three minutes, and another 300 yards for a further period of three minutes; this procedure will enable the advance to be continuous for at least 500 yards in rear of the first line trench without any necessity for further orders. A programme based on this principle admits of endless variation to suit various "special ideas"; the commander must decide before framing it, exactly how far he intends to penetrate the enemy's line, and the attack must be stopped absolutely on that line and the position consolidated. I shall have more to say on this point later on, but for the present it is desired to emphasize the necessity for accurate timing and drill which can only be achieved by practice and not by listening to lectures or reading "Notes from the front."

During an operation of this kind, it will be observed that the group commander has three lines of telephone available for communication with the front, viz: two infantry lines, and one artillery line; the artillery staff officer should preferably be with that part of the line from which the best view of the whole can be obtained, and this may be near the centre; he will keep the artillery commander constantly informed of what is going on at the front to enable the latter to make the best use of his batteries, and his messages will be passed to group commander's S.O. for his information. An artillery line may at any time be required for an infantry message and vice versa.

If an infantry line breaks down the battalion commander must utilise the nearest adjacent line to report the occurrence, and for other reports, and must leave an orderly with the operator of the adjacent instrument to take messages which arrive from group head-quarters; the same procedure will naturally be adopted in the case of the

artillery line breaking down. At this stage of the training it should be carefully instilled into the minds of all infantry officers that co-operation between artillery and infantry calls for an equal measure of intelligent initiative from the infantry as from the artillery, and the first lesson for all infantry officers to learn in this connection is how to describe a target intelligently which they desire the artillery to engage. Such a message as the following is not of much value to anyone. "Enemy collecting for counter-attack on our left front" signed "Captain Jones, Commdg. B Coy." An improvement on this would be "About two enemy companies collecting S.E. corner of Bois le Pretre square A. 26.c.2.3. probably for counter-attack on Fortin 203." Signed Captain Jones Commdg. B Coy., 2nd Royal Fusiliers."

It is necessary for the infantry officer to mentally put himself in the position of the artillery commander who is expected to act on this message and think exactly what he could or would do on receipt of such a message. To obtain intelligent co-operation from the artillery it is necessary that intelligent information should be given by the infantry.

I will give one instance which will serve to show the tremendous responsibility which rests on the infantry officer in respect to this question of information. A company officer in the firing trench telephoned to the affiliated battery that a German working party was repairing a trench on a certain square, the battery opened fire in response, the infantry officer who was observing the fire, telephoned result "600 yds. over 800 yds. left," the battery commander unable to understand such an erratic result referred to the artillery brigade commander, who ordered him to stop firing and proceeded to plot the spot on the map where the next shot would have fallen if the correction had been made, and found that it would have fallen in our own trenches where a British working party was busy. It was finally ascertained that the infantry officer had observed the working party, believing it to be in the German lines (a very easy mistake to make) and had located it inaccurately on the squared map.

Exercises of the kind above described are a direct introduction to the more elaborate schemes of attack in trench warfare, and accustom artillery and infantry to work in co-operation, with a degree of precision in execution which is seldom attainable in encounter battles; at the same time they serve to exercise the troops in Field movements and make them adaptable to any situation which may arise, it being understood clearly that the method of working by a pre-arranged time programme is only intended to be adopted when it would be impossible otherwise to take the enemy position, and this will always be the case in trench warfare.

The next step in the training will be the exercising of the division as a co-ordinated whole on the special idea of an encounter battle, with a view to instructing it in field movements under the General commanding the division. As the time for training now available is exceedingly short it may be necessary to carry on brigade and divisional training simultaneously. In my old division the 18th, each brigade had one day a week with its affiliated artillery under

the infantry Brigadier as group commander, and the Major General had one divisional operation, which towards the end of the training was a two days affair. This was in the early summer.

During divisional operations the Brig.-General commanding the artillery will establish his head-quarters with the G.O.C. of the division, and remain always in close touch with him, invariably leaving his Brigade Major or Staff Captain at divisional head-quarters if he requires to leave head-quarters himself to accompany the G.O.C. in the field or to personally observe the course of the operations or reconnoitre any part of the scene of action. A fairly typical case of the distribution of the artillery will be two brigades grouped under infantry Brigadiers, each perhaps with one howitzer battery attached; one brigade and howitzer brigade less two batteries held at the immediate disposition of the G.O.C. R.A. who will dispose of it in such a manner as to have it in readiness to give effect to the G.O.C.'s plan, so far as it can be ascertained from time to time, with a view to giving the most effective support possible at the shortest notice, as soon as the G.O.C. has decided from what point and at what objective he will launch his reserves. This does not imply that the ungrouped artillery will be held in reserve out of action, all the time, but that it will be so disposed as to enable it most effectively to co-operate in the crisis of the fight. The G.O.C. and C.R.A. must be in the most intimate touch in order to secure the best results. At divisional head-quarters the G.S. will arrange all messages coming in and copies of messages going out, so that the artillery commander or his brigade major can keep in touch with the situation in every detail; the artillery commander similarly will show a G.S.O. all artillery messages, in or out, which it is desirable that the divisional General should be cognizant of. The head-quarter section of the signal coy. is responsible for laying communications from artillery head-quarters to artillery brigades which are under immediate control of the C.R.A. The C.R.A. may, and probably will, wish to communicate with the grouped brigades in order to get reports on the artillery situation which will aid him in deciding whether further artillery support is required at any particular point, such communications can be made through the group head-quarters or by orderly to the artillery brigade commander, or by both methods.

Under different circumstances one or more artillery brigades may be detailed to support certain infantry brigades in attaining a defined objective, but without being "grouped" under the infantry brigadier's command, or the whole of the artillery may be controlled entirely from the C.R.A.'s head-quarters; the circumstances under which such centralisation is possible must however be rare in the case of encounter battles.

We now get to what has become the normal kind of warfare on the Western front, and I will endeavour to describe the normal situation in so far as it concerns our subject.

A division is allotted to a certain section of the German trench line, and occupies infantry trenches suitably disposed for holding up any German attack emanating from that section, and on the other hand destined to facilitate any attack from our side against that

portion of the German front; the system of trenches on both sides will vary considerably in depth according to circumstances. A defensive system, from the obstacles in front, to the traversed fire trench about the rear end of the approach trenches, may be as much as half a mile to two miles in depth.* The front will be divided up between infantry brigades, and each brigade will probably have a front calculated for two battalions, the system may be one battalion in firing line and one in reserve, or each battalion of the brigade may have two companies up and two in reserve; let us take the latter arrangement as a basis and divide the section allotted to the brigade into four portions A.B.C. and D. each of which is allotted to a battalion; we may designate the battalions by the letters a, b, c and d, for purpose of reference.

The G.O.C. divisional artillery will, so far as the conditions permit, allot an artillery brigade to each section of the German trenches corresponding with the infantry allotment, the artillery brigades being those which have been affiliated or grouped with the same infantry brigades during training; the howitzer brigade will usually be split up and the batteries distributed between the gun brigades for the purpose of engaging targets on the gun brigades' fronts which can best be dealt with by howitzer fire. Each battalion of infantry in the trenches is connected by telephone with the battery of the artillery brigade affiliated to its own infantry brigade, and a company commander in the firing trench can at any time call up the affiliated battery; the battery will usually have one of its officers in or near the firing trench for the purpose of observing fire, acting as artillery liaison officer with the infantry, and keeping his battery commander informed of everything going on in his front. The battery commander will take frequent opportunities of discussing affairs with the battalion commander and cultivating the closest and most intimate relations with him.

Each battery commander is in telephonic communication with his own brigade commander and each battalion commander is similarly in telephonic communication with his Brigadier; the fighting post of the artillery brigade commander will be as close as possible to that of the infantry Brigadier's—the fighting posts are not necessarily the normal head-quarters but these latter will also be in close touch. It will then be seen that there are two complete systems of telephonic

* Experiences gained in the winter battle in Champagne.

(Translated from a German document).

Depth of Defensive System.

As the result of necessity and daily requirements, a network of trenches, improved by experience and proved in actual fighting to be effective was constructed during the winter battle in Champagne for a depth of 2½ K.M.: a network which superficially had an irregular and unsystematic appearance, but which in reality represented the results of a carefully thought out, complete, and minutely organised scheme, which finally gave commanders and men the conviction that the position was impregnable, and that even should the enemy succeed in making a local breach in our line, which cannot always be prevented, the attacks would none the less be doomed to complete failure.

We have learned by experiment and experience that what was required was not one, or even several lines of fixed defences, but rather a fortified zone which permitted a certain liberty of action, so that the best use could be made of all the advantages offered by the configuration of the ground, and all the disadvantages could as far as possible be overcome.

communication from the firing trench to the supporting battery, and from the supporting batteries to brigade head-quarters, one system being the artillery lines, and the other the infantry lines, each used for their own purposes, but capable at any moment of supplementing each others deficiencies in the event of a break down.

From the infantry Brigadiers and from the artillery brigade commanders separate lines again run respectively to the G.O.C. of the division, and to the G.O.C. Divisional Artillery whose normal head-quarters are in the closest proximity, and fighting station probably one and the same.

When a distance of only 30 yards separates the British from the German trenches, it will be readily understood that very fine shooting is required on the part of the artillery, and the closest touch must be maintained between the artillery and infantry to enable the latter to know exactly what may be expected when the artillery is registering or engaging various parts of the German front, and to what extent they must temporarily evacuate this or that trench.

Information as to the Germans' activities will constantly be coming back from the firing line to the guns, such as "Machine gun Fortin apparently being repaired on square A26. b2.5" or "Trench Mortars in square B.21 d.3.4 causing casualties" artillery brigade commanders can at once give the necessary help suited to the case.

It must be understood that the intimate grouping of artillery and infantry brigades for trench warfare does not imply that the artillery brigade commander is placed under the command of the infantry Brigadier as he might be in a billeting area, or in a tactical operation ; the grouping in the trenches assures immediate response by the latter to the requirements of the former, without the delay or congestion which would be caused by constant reference to a central authority in cases where centralisation is unnecessary ; but the G.O.C. R.A. must always have the reins in his hands, and be in a position to use any battery, for any purpose, over any of the area covered by its fire irrespective of the particular section of the German trenches allotted to it for the special purpose of giving the infantry an affiliated artillery unit upon which it has always a direct call. The allotment of zones to brigades of artillery in conformity with the distribution of infantry brigades, is only one part of the artillery organisation : I have dwelt somewhat particularly upon it because it is in this connection that the co-operation between infantry and artillery is most in evidence, but we should have an incomplete picture of the organisation and action of the artillery if we omitted to review, however briefly, some of the other aspects of the employment of this arm. The G.O.C. Divisional Artillery must apportion the whole of the enemy area behind the firing trenches between brigades and batteries in such a manner as to ensure every part of it being under fire from some quarter ; cross fire and enfilade fire upon certain points must be arranged for, and this will in some cases require co-operation on the part of the neighbouring artillery on the right or left, situated in the area of another division. Sometimes it will be found that even where the enemy trenches are closest to our own it is impossible to obtain any effect by direct fire or even to observe the effect of that fire owing to the enormous mine

craters immediately in front; in such a case resort must be had to enfilade fire and oblique observation if we are to give our infantry in their front trenches the support they require. There is also the allotment of "selected batteries" to work with aeroplane observation, and the organisation of the whole of the heavy artillery which is allotted to the divisional area, in such a manner as to dominate the enemy's artillery and destroy his defensive works in rear.

From the occupation of a section of the line the next step is the preparation for the attack. Until recently it was believed that a continuous offensive, properly conducted, with no check in the torrent of fresh troops, must be able to break through the German lines, but experience has shown that this policy pursued too literally cannot achieve the results hoped for owing to the fact that the effect of the preparatory bombardment can only be temporary and the impetus of the infantry attack, no matter how well timed to secure the maximum results in the minimum of time, no matter how sufficiently and continuously it is reinforced from the rear, will inevitably reach the limit of its penetration, as the effect of the preliminary bombardment and subsequent supporting artillery fire wanes in effect, and is succeeded by attempts on the part of the enemy to rally and entrench and ultimately to counter-attack. Such a doctrine is disappointing to those who have tenaciously clung to the idea that a sufficiently determined offensive, amply supported by artillery and continuously reinforced, could drive its way right through the enemy's lines, but it seems necessary to recognise the fact that a certain psychological moment will be reached in every successful attack when it behoves the commander to consolidate his gains, and reorganise his troops for a fresh effort at the earliest possible moment. The rôle of the artillery must be to arrange beforehand to give effective support against counter-attack to certain points of tactical importance which it is recognised must be held at any cost, by the best troops, and immediately placed in a through state of defence. Such points will certainly be made the focus of hostile counter-attacks and adequate artillery preparation must be considered beforehand so that such attacks may not have a chance of succeeding before the infantry have had time to complete their defensive preparations.

ATTACK BY A DIVISION IN TRENCH WARFARE.

The preparations for the attack by one or more divisions in trench warfare are of the most elaborate nature, and call for equal efficiency in Staff work and in the accurate drill of the troops engaged. The object may be stated as the complete penetration of the enemy's line with a view to the capture of his artillery. This can only be obtained by driving forward the attack without intermission or any loss of continuity, and delivering our blows in such quick succession as to forestall the possibility of successful counter-attack.

The preliminary phases of the infantry attack no longer exists in trench warfare, the infantry combat in fact commences with the assault. The artillery opens the path for the infantry and in-as-much as it has to cover the whole depth of the enemy's position, it must be well forward at the outset, to avoid as far as possible the necessity

for change of position which would either be impossible under fire or endanger the success of the operation at a critical moment owing to cessation of fire during movement. The task of the divisional artillery in the preparation of the attack will be to supplement the fire of the heavy artillery, with the object of :

- (a). Destroying the enemy's accessory works, and wire entanglements.
- (b). Breaking down the first line trenches and shelters in rear together with the second line trenches and communications.
- (c). Damaging flanking works and being always in readiness to open fire on any such works as may not be discovered until the moment of assault.

The infantry trench mortars will be particularly valuable in co-operating with the artillery in all cases where, owing to the lie of the ground the artillery fire cannot be effectively brought to bear, or accurately observed. The success of this preliminary bombardment will depend on the accurate registration of targets previously carried out, after which there will be no prolonged or rapid fire during the preliminary bombardment. 80 to 100 rounds per Field Gun or Howitzer should be about the average expenditure of ammunition and the rate of fire never greater than four rounds a minute from each gun. The preliminary bombardment must continue until the accessory defences of the first and second lines have been destroyed, not the least part of which, is the destruction of the enemy wire entanglements; the bombardment of trenches, dug-outs, and communication trenches will proceed simultaneously with the destruction of the accessory defences as also the attack of the enemy's batteries by our heavy batteries.

As soon as the preliminary bombardment has effected its object, a final bombardment by bursts of rapid fire will take place. At a given signal or at a certain prearranged hour, the infantry will be launched from the starting parallel to the assault; at the same moment the whole of the guns which were firing in the enemy's front line trenches will increase their elevation so as to create a curtain of shrapnel fire say 300 yards in rear; during this period the infantry will probably be able to reach the enemy's front trenches without any casualties to speak of; if our artillery fire has been thoroughly effective the whole line can proceed at a walk. As soon as the front trenches are carried the artillery curtain fire must be carried say another 300 yards to the rear, while our infantry press forward to the attack of the second line trenches and it is at this phase of the action that guns will have to be brought forward to demolish accessory defences which have remained undiscovered until they have suddenly opened fire on the assaulting columns at close quarters.* The artillery officers who have been observing for their batteries in the front trenches or forward observing stations should go forward with the infantry, taking forward their telephone lines and keeping

* See Footnote at end of the lecture on the opposite page.

their batteries and brigade commander informed as to the progress and requirements of the infantry.

Telephonic communication must be supplemented by visual signals; it is essential for the artillery to know where the infantry is; one of the most practical methods is for each infantry section to carry one small screen of the type known as "casualty screen" at manoeuvres, and to plant it immediately in rear of the section when halted. Rocket signals have been tried, to indicate that our infantry has reached a certain line. Any signals are liable to be imitated by the enemy and thus stultify their value.

When it is fully realised what elaboration is necessary in order continuously to maintain the maximum of our offensive power for a sufficient time to ensure the capture of the enemy's position and guns and to hold what we have gained, it will be evident that preparation for the consolidation of our gains must be commenced while the wave of success is at its height before it has begun to expend itself, and that then, and not later, we must begin to prepare for a renewal of the attack with the same careful elaboration which characterised the first effort and ensured its success so as to confront the enemy with an equally well prepared second blow, before he has had time to recover from the first.

* The following extracts from a D.S.O. Gazette, illustrate vividly the nature of the operation of maintaining the close support of the Infantry by the Artillery:

Major Charles Wesley Weldon McLean, 52nd Brigade, Royal Field Artillery.

For conspicuous gallantry and ability on many occasions between May and September, 1915, notably the following: On 21st September, 1915, when, although stunned when his Observation Station was hit, he remained at his post and continued to observe the fire of his guns. On 25th September, when he brought forward his battery with great dash over the open in close support of the infantry near Hohenzollern Redoubt, and ran a wire at once under heavy fire, to the Battalion Headquarters. He observed fire from a very exposed position till after dark, when he was wounded after rejoining his battery. He refused to leave his battery, and brought it out of action himself from a most critical situation.

Captain Gerald Burrard, 52nd Brigade, Royal Field Artillery.

For conspicuous gallantry on many occasions, notably the following: On 25th September, 1915, when, as Brigade Adjutant, he guided his brigade across the open under continuous shell and rifle fire to the close support of the infantry near Hohenzollern Redoubt, and pointed out their positions to the batteries. On the night of 27th September, when he arranged and assisted in laying wires under a heavy shell and rifle fire. Captain Burrard has been continuously on active service since November, 1914, and his name was brought to notice for gallantry after actions at Givenchy, Ypres, and Festubert.



THE DIARY OF THE WAR OF 1914.

BY COLONEL F. C. MORGAN, LATE R.A.

(Continued from page 436).

Extracts from the despatch of Field Marshal Sir John French, Commanding-in-Chief the British Army in France, dated 15th October, 1915, covering the operations of the Forces since the date of those described in his last despatch, dated 15th June, 1915.

On 2nd June the enemy made a final offensive in the Ypres salient with the object of gaining our trenches and position at Hooze. The attack was most determined, and was preceded by a severe bombardment. A gallant defence was made by troops of the 3rd Cavalry Division, and 1st Indian Cavalry Division, and our position was maintained throughout. During the first weeks of June the front of the Second Army was extended to the north as far as the village of Boesinghe.

After the conclusion of the Battle of Festubert the troops of the First Army were engaged in several minor operations. By an attack delivered on the evening of 15th June after a prolonged bombardment the 1st Canadian Brigade obtained possession of the German front line trenches north-east of Givenchy, but were unable to retain them owing to their flanks being too much exposed.

On 16th June an attack was carried out by the 5th Corps on the Bellewaarde Ridge, east of Ypres. The enemy's front line was captured, many of his dead and wounded being found in the trenches.

On 6th July a small attack was made by the 11th Infantry Brigade on a German salient between Boesinghe and Ypres, which resulted in the capture of a frontage of about 500 yards of trench and a number of prisoners.

In the course of this operation it was necessary to move a gun of the 135th Battery, Royal Field Artillery, into the front line to destroy an enemy sap-head. To reach its position the gun had to be taken over a high canal embankment, rafted over the canal under fire, pulled up a bank with a slope of nearly 45 degrees, and then dragged over three trenches and a sky line to its position seventy yards from the German lines. This was carried out without loss. This incident is of minor importance in itself, but I quote it as an example of the daily difficulties which officers and men in the trenches are constantly called upon to overcome, and of the spirit of initiative and resource which is a marked feature amongst them.

From the 10th to the 12th July, the enemy made attempts, after heavy shelling, to recapture the lost portion of their line; but our artillery, assisted by that of the French on our left, prevented any serious assault from being delivered.

Since my last despatch a new device has been adopted by the enemy for driving burning liquid into our trenches with a strong jet. Thus supported, an attack was made on the trenches of the Second Army at Hooze, on the Menin road, early on 30th July. Most of the infantry occupying these trenches were driven back, but their retirement was due far more to the surprise and temporary confusion caused by the burning liquid than to the actual damage inflicted.

On 9th August these losses were brilliantly regained, owing to a successful attack carried out by the 6th Division.

From the conclusion of the above-mentioned operations until the last week in September, there was relative quiet along the whole of the British line, except at those points where the normal conditions of existence comprised occasional shelling or constant mine and bomb warfare.

After full discussion of the military situation a decision was arrived at for joint action, in which I acquiesced. It was arranged that we should make a combined attack from certain points of the Allied line during the last week in September.

The reinforcements received enabled me to comply with several requests which General Joffre has made that I should take over additional portions of the French line.

In fulfilment of the rôle assigned to it in these operations the Army under my command attacked the enemy on the morning of the 25th September. The main attack was delivered by the 1st and 4th Corps between the La Bassée Canal on the north and a point of the enemy's line opposite the village of Grenay on the south. At the same time a secondary attack, designed with the object of distracting the enemy's attention and holding his troops to their ground, was made by the 5th Corps on Bellewaarde Farm, situated to the east of Ypres. Subsidiary attacks with similar objects were delivered by the 3rd and Indian Corps north of the La Bassée Canal and along the whole front of the Second Army. The object of the secondary attack by the 5th Corps was most effectively achieved, for not only was the enemy contained on that front, but we had reason to believe that reserves were hurried toward that point of the line.

The attack was made at daybreak by the 3rd and 14th Divisions, and at first the greater part of the enemy's front line was taken; but, owing to the powerful artillery fire concentrated against them, the troops were unable to retain the ground, and had to return to their original trenches toward nightfall. The 5th Corps succeeded, however, in capturing two officers and 138 other prisoners. Similar demonstrations with equally good results were made along the whole front of the Second Army.

With the same object in view, those units of the First Army occupying the line north of the Bethune-La Bassée Canal were detailed to carry out some minor operations. Portions of the 1st Corps assaulted the enemy's trenches at Givenchy. The Indian Corps attacked the Moulin du Piètre, while the 3rd Corps was directed against the trenches at Le Bridoux. These attacks started at daybreak and were at first successful all along the line. Later in the day the enemy brought up strong reserves, and after hard fighting and variable fortunes the troops engaged in this part of the line reoccupied their original trenches at nightfall. They succeeded admirably, however, in fulfilling the rôle allotted to them, and in holding large numbers of the enemy away from the main attack. The 8th Division of the 3rd Corps and the Meerut Division of the Indian Corps were principally engaged in this part of the line.

On the front of the Third Army subsidiary operations of a similar nature were successfully carried out.

The Wing of the Royal Flying Corps attached to this Army performed valuable work by undertaking distant flights behind the enemy's lines and by successfully blowing up railways, wrecking trains, and damaging stations on his line of communication by means of bomb attacks. Valuable assistance was rendered by Vice-Admiral Bacon and a squadron of His Majesty's ships operating off Zeebrugge and Ostend.

The general plan of the main attack on the 25th September was as follows:—

In co-operation with an offensive movement by the 10th French Army on our right, the 1st and 4th Corps were to attack the enemy from a point opposite the little mining village of Grenay on the south to the La Bassée Canal on the north. The Vermelles-Hulluch road was to be the dividing line between the two Corps, the 4th Corps delivering the right attack, the 1st Corps the left.

In view of the great length of line along which the British troops were operating, it was necessary to keep a strong reserve in my own hand. The 11th Corps, consisting of the Guards, the 21st and 24th Divisions, were detailed for this purpose. This reserve was the more necessary owing to the fact that the 10th French Army had to postpone its attack until one o'clock in the day; and, further, that the Corps operating on the French left had to be directed in a more or less south-easterly direction, involving, in case of our success, a considerable gap in our line.

To ensure, however, the speedy and effective support to the 1st and 4th Corps in the case of their success, the 21st and 24th Divisions passed the night of the 24th/25th on the line Beuvry (to the east of Bethune)-Noeux les Mines. The Guards Division was in the neighbourhood of Lillers on the same night. I also directed the General Officer Commanding Second Army to draw the 28th Division back to Baillieu and to hold it in readiness to meet unexpected eventualities.

The British Cavalry Corps, less 3rd Cavalry Division, under General Fanshawe, was posted in the neighbourhood of St. Pol and Baillieu les Pernes; and the Indian Cavalry Corps, under General Rimington, at Doullens; both in readiness to co-operate with the French Cavalry in exploiting any success which might be attained by the combined French and British Forces. Plans for effective co-operation were fully arranged between the Cavalry Commanders of both Armies. The 3rd Cavalry Division, less one brigade, was assigned to the General Officer Commanding First Army as a reserve, and moved into the area of the 4th Corps on the 21st and 22nd September.

Opposite the front of the main line of attack the distance between the enemy's trenches and our own varied from about 100 to 500 yards. The country over which the advance took place is open and overgrown with long grass and selfsown crops. From the canal southward our trenches and those of the enemy ran, roughly,

parallel up an almost imperceptible rise to the south-west. From the Vermelles-Hulluch road southward the advantage of height is on the enemy's side as far as the Bethune-Lens road. There the two lines of trenches cross a spur in which the rise culminates, and thence the command lies on the side of the British trenches. Due east of the intersection of spur and trenches, and a short mile away, stands Loos. Less than a mile further south-east is Hill 70, which is the summit of the gentle rise in the ground.

Other notable tactical points in our front were:—

"*Fosse 8*" (a thousand yards south of Auchy), which is a coal mine with a high and strongly defended slag heap.

"*The Hohenzollern Redoubt*."—A strong work thrust out nearly five hundred yards in front of the German lines and close to our own. It is connected with their front line by three communication trenches abutting into the defences of Fosse 8.

Cité St. Elie.—A strongly defended mining village lying fifteen hundred yards south of Haisnes.

"*The Quarries*."—Lying half way to the German trenches west of *Cité St. Elie*.

Hulluch.—A village strung out along a small stream, lying less than half a mile south-east of *Cité St. Elie* and 3,000 yards north-east of Loos.

Half a mile north of Hill 70 is "*Puits 14 bis*," another coal mine, possessing great possibilities for defence when taken in conjunction with a strong redoubt situated on the north-east side of Hill 70.

The attacks of the 1st and 4th Corps were delivered at 6.30 a.m., and were successful all along the line, except just south of the La Bassée Canal. The enemy met the advance by wild infantry fire of slight intensity, but his artillery fire was accurate and caused considerable casualties.

The 47th Division on the right of the 4th Corps rapidly swung its left forward and occupied the southern outskirts of Loos and a big double slag heap opposite Grenay, known as the double Crassier. Thence it pushed on, and, by taking possession of the cemetery, the enclosures and chalk pits south of Loos, succeeded in forming a strong defensive flank. This London Territorial Division acquitted itself most creditably. It was skilfully led and the troops carried out their task with great energy and determination. They contributed largely to our success in this part of the field.

On the left of the 47th Division a Scottish Division of the New Armies (15th Division) assaulted Loos, Hill 70, and Fosse 14 bis. The attack was admirably delivered, and in a little more than an hour parts of the division occupied Loos and its northern outskirts, Puits 14 bis, and Hill 70, whilst some units had pushed on as far as *Cité St. Auguste*, a mile east of Hill 70.

The 15th Division carried out its advance with the greatest vigour, in spite of its left flank being exposed, owing to the 1st Division on its left having been checked.

About 1 p.m., the enemy brought up strong reserves, and the advanced portions of the division at Fosse 14 bis and on the far side of Hill 70 were driven in. We had, however, secured the very substantial gain of Loos and the western portion of Hill 70.

At 9.30 a.m., I placed the 21st and 24th Divisions at the disposal of the General Officer Commanding First Army, who at once ordered the General Officer Commanding the 11th Corps to move them up in support of the attacking troops. Between 11 a.m. and 12 noon the central brigades of these divisions filed past me at Bethune and Noeux les Mines respectively. At 11.30 a.m., the heads of both divisions were within three miles of our original trench line. As the success of the 47th Division on the right of the 4th Corps caused me less apprehension of a gap in our line near that point, I ordered the Guards Division to move in a southerly direction from Bailleul.

The 1st Division, attacking on the left of the 15th, was unable at first to make any headway with its right brigade. The brigade on its left (the 1st) was, however, able to get forward and penetrated into the outskirts of the village of Hulluch, capturing some gun positions on the way.

The determined advance of this brigade, with its right flank dangerously exposed, was most praiseworthy, and, combined with the action of divisional reserves, was instrumental in causing the surrender of a German detachment some 500 strong which was holding up the advance of the right brigade in the front system of trenches. The inability of the right of this division to get forward had, however, caused sufficient delay to enable the enemy to collect local reserves behind the strong second line.

The arrangements, the planning and execution of the attack, and the conduct of the troops of the 4th Corps were most efficient and praiseworthy.

In the attack of the 1st Corps the 7th Division was directed on the Quarries. The 9th Division was to capture the Hohenzollern Redoubt and then to push on to Fosse 8. The assault of the 7th Division succeeded at once, and in a very short time they had reached the western edge of the Quarries, *Cité St. Elie*, and even the village of Haisnes, the tendency of the action having been to draw the troops northward.

On the right of the 9th Division the 26th Brigade secured Fosse 8 after heavy

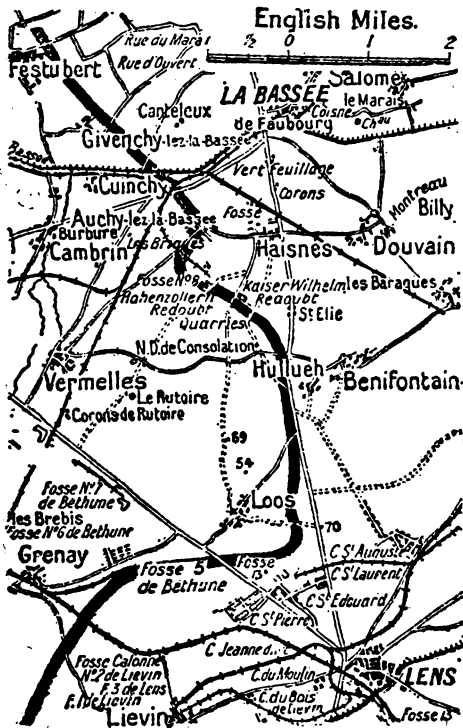
fighting, and the 28th Brigade captured the front line of the German trenches east of Vermelles railway. At the latter point the fighting was extremely severe; and this brigade, suffering considerable losses, was driven back to its own trenches.

At nightfall, after a heavy day's fighting and numerous German counter-attacks, the line was, roughly, as follows: From the Double Crassier, south of Loos, by the western part of Hill 70, to the western exit of Hulluch; thence by the Quarries and western end of Cité St. Elie, east of Fosse 8, back to our original line.

Throughout the length of the line heavy fighting was in progress, and our hold on Fosse 8, backed as it is by the strong defences and guns of Auchy, was distinctly precarious. Heavy rain fell throughout the day, which was very detrimental to efficient observation of fire and reconnaissance by aircraft.

In the course of the night 25th/26th September the enemy delivered a series of heavy counter-attacks along most of our new front. The majority of these were repulsed with heavy loss; but in parts of the line, notably near the Quarries, our troops were driven back a certain distance.

At 6 p.m., the Guards Division arrived at Noeux les Mines, and on the morning of the 26th I placed them at the disposal of the General Officer commanding First Army.



The situation at the Quarries, described above, was readjusted by an attack of the 7th Division on the afternoon of September 26th; and on that evening very heavy attacks delivered by the enemy were repulsed with severe loss.

On the 4th Corps front attacks on Hulluch and on the redoubt on the east side of Hill 70 were put in operation, but were anticipated by the enemy organising a very strong offensive from that direction. These attacks drove in the advanced troops of the 21st and 24th Divisions, which were then moving forward to attack. Reports regarding this portion of the action are very conflicting, and it is not possible to form an entirely just appreciation of what occurred in this part of the field.

At nightfall there was no change up to Hill 70, except for a small gain of ground south of Loos. From Hill 70 the line bent sharply back to the north-west as far as Loos-La Bassée road, which it followed for a thousand yards, bearing thence north-eastward to near the west end of Hulluch. Thence northward it was the same as it had been on the previous night.

The night of September 26th/27th was as disturbed as the previous night, for many further counter-attacks were

made and constant pressure was maintained by the enemy. A dismounted cavalry brigade was thrown into Loos to form a garrison. On this day I placed the 28th Division at the disposal of the General Officer commanding First Army.

I regret to say that Major-General Sir Thompson Capper K.C.M.G., C.B., D.S.O., commanding 7th Division, was severely wounded on the 26th and died on the morning of the 27th. He was a most distinguished and capable leader, and his loss will be severely felt.

Soon after dawn on the 27th it became apparent that the Brigade holding Fosse 8 was unable to maintain its position, and eventually it was slowly forced back until at length our front at this point coincided with the eastern portion of the Hohenzollern Redoubt.

I regret to say that during this operation Major-General G. H. Thesiger, C.B., C.M.G., A.D.C., commanding the 9th Division, was killed whilst most gallantly endeavouring to secure the ground which had been won.

In the afternoon of this day the Guards Division, which had taken over part

of the line to the north of the 4th Corps, almost restored our former line, bringing it up parallel to and slightly west of the Lens-La Bassée road. This division made a very brilliant and successful attack on Hill 70 in the afternoon. They drove the Germans off the top of the hill, but could not take the redoubt, which is on the north-east slopes below the crest. They also took the Chalk Pit which lies north of Puits 14, and all the adjacent woods, but were unable to maintain themselves in the Puits itself, which was most effectively commanded by well posted machine guns.

The 47th Division on the right of the Guards captured a wood further to the south and repulsed a severe hostile counter-attack.

The 28th was passed in consolidating the ground gained and in making a certain number of internal moves of divisions, in order to give the troops rest and to enable those units whose casualties had been heavy to refill their ranks with reinforcements. The 47th Division made a little more ground to the south, capturing one field gun and a few machine-guns. On the evening of this day the situation remained practically unchanged.

The line occupied by the troops of the First Army south of the canal became now very much extended by the salient with which it indented the enemy's line.

The French 10th Army had been very heavily opposed, and I considered that the advance they were able to make did not afford sufficient protection to my right flank. On representing this to General Joffre he was kind enough to ask the Commander of the northern group of French Armies to render me assistance. General Foch met these demands in the same friendly spirit which he has always displayed throughout the course of the whole campaign, and expressed his readiness to give me all the support he could. On the morning of the 28th we discussed the situation, and the General agreed to send the 9th French Corps to take over the ground occupied by us extending from the French left up to and including that portion of Hill 70 which we were holding, and also the village of Loos. This relief was commenced on the 30th September and completed on the two following nights.

During the 29th and 30th September and the first days of October fighting was almost continuous along the northern part of the new line, particularly about the Hohenzollern Redoubt and neighbouring trenches, to which the enemy evidently attached great value. His attacks, however, invariably broke down with very heavy loss under the accurate fire of our infantry and artillery.

The Germans succeeded in gaining some ground in and about the Hohenzollern Redoubt but they paid heavily for it in the losses they suffered.

Our troops all along the front were busily engaged in consolidating and strengthening the ground won, and the efficient and thorough manner in which this work was carried out reflects the greatest credit upon all ranks. Every precaution was made to deal with the counter-attack which was inevitable.

During these operations the weather has been most unfavourable, and the troops have had to fight in rain and mud and often darkness. Even these adverse circumstances have in no way affected the magnificent spirit continually displayed alike by officers and men.

I have to deplore the loss of a third most valuable and distinguished General of Division during these operations. On the afternoon of the 2nd October Major-General F. D. V. Wing, C.B., commanding the 12th Division was killed.

On the afternoon of 8th October our expectations in regard to a counter attack were fulfilled. The enemy directed a violent and intense attack all along the line from Fosse 8 on the north to the right of the French 9th Corps on the south. The attack was delivered by some twenty-eight battalions in first line, with larger forces in support, and was prepared by a very heavy bombardment from all parts of the enemy's front.

At all parts of the line except two the Germans were repulsed with tremendous loss, and it is computed on reliable authority that they left some eight to nine thousand dead lying on the battlefield in front of the British and French trenches.

From subsequent information it transpired that the German attack was made by about twelve battalions against the line Loos-Chalk Pit, and that a subsidiary attack by six to eight battalions was made from the direction of the Hohenzollern Redoubt against the Guards Division. Some eight or ten German battalions were directed against the French 9th Corps.

The position assaulted and carried with so much brilliancy and dash by the 1st and 4th Corps on 25th September was an exceptionally strong one. It extended along a distance of some 6,500 yards, consisted of a double line, which included works of considerable strength, and was a network of trenches and bomb-proof shelters. Some of the dug-outs and shelters formed veritable caves thirty feet below the ground, with almost impenetrable head cover. The enemy had expended months of labour upon perfecting these defences.

The total number of prisoners captured during these operations amounted to 57 officers and 3,000 other ranks. Material which fell into our hands included 26 field-guns, 40 machine-guns, and three minenwerfer.

Since the date of my last despatch the Army has received strong reinforcements, and every reinforcement has had its quota of Field Artillery. In addition, numerous batteries of heavy guns and howitzers have been added to the strength

of the heavy artillery. The arrival of these reinforcements in the field has tested the capacity of the Artillery as a whole to expand to meet the requirements of the army and to maintain the high level of efficiency that has characterised this arm throughout the campaign. Our enemy may have hoped, not perhaps without reason, that it would be impossible for us, starting from such small beginnings, to build up an efficient Artillery to provide for the very large expansion of the Army. If he entertained such hopes, he has now good reason to know that they have not been justified by the result.

The efficiency of the Artillery of the New Armies has exceeded all expectations, and during the period under review excellent services have been rendered by the Territorial Artillery.

I must give a special word of praise to the Officers and rank and file of the Royal Garrison Artillery for the admirable way in which they have accustomed themselves to the conditions of active service in the field, to which for the most part they were unaccustomed, and for the manner in which they have applied their general knowledge of gunnery to the special problems arising in trench warfare. The excellence of their training and the accuracy of their shooting have, I feel sure, made a marked impression on the enemy.

The work of the Artillery during the daily life in the trenches calls for increasing vigilance and the maintenance of an intricate system of communications in a thorough state of efficiency, in order that the guns may be ever ready to render assistance to the Infantry when necessity arises. A high standard of initiative is also required in order to maintain the moral ascendancy over the enemy, by impeding his working parties, destroying his works, and keeping his artillery fire under control. To the many calls upon them the Artillery has responded in a manner that is altogether admirable.

In the severe offensive actions that have taken place it is not too much to say that the first element of success has been the artillery preparation of the attack. Only when this preparation has been thorough have our attacks succeeded. It is impossible to convey in a despatch an adequate impression of the amount of care and labour involved in the minute and exact preparations that are the necessary preliminaries of a bombardment preparatory to an attack in a modern battle. The immense number of guns that it is necessary to concentrate, the amount of ammunition to be supplied to them, and the diversity of the tasks to be carried out, demand a very high order of skill in organisation and technical professional knowledge.

The successful attacks at Hoge on 9th August and of the First Army on 25th September show that our Artillery officers possess the necessary talent and the rank and file the necessary skill and endurance to ensure success in operations of this character. Moreover, the repulse of the enemy's attack on 8th October in the neighbourhood of Loos and Hulluch with such heavy losses shows the capacity of the artillery to concentrate its fire promptly and effectively at a moment's notice for the defence of the front.

I cannot close these remarks on the artillery without expressing my admiration for the work of the observing officers and the men who work with them. Carrying out their duties, as they do, in close proximity to the front line in observing stations that are the special mark of the enemy's guns, they are constantly exposed to fire, and are compelled to carry on their work, involving the use of delicate instruments and the making of nice calculations, in circumstances of the greatest difficulty and danger. That they have never failed in their duties, and that they have suffered very heavy casualties in performing them, are to their lasting credit and honour.

The work of the Artillery in co-operation with the Royal Flying Corps continues to make most satisfactory progress, and has been most highly creditable to all concerned.

I have on previous occasions called your Lordship's attention to the admirable work of the Corps of the Royal Engineers. This work covers a very wide field, demanding a high standard of technical knowledge and skill, as well as unflinching energy; and throughout the supreme test of war these qualities have never been found wanting, thus reflecting the greatest credit on the organisation of the Corps as a whole, and on the training of the Officers and men individually. The spirit which is imbued in all ranks, from the base ports to the front trenches and beyond, is the same. No matter where or how the personnel of the Corps has been employed, devotion to duty and energy have been ever present.

Owing to the repeated use by the enemy of asphyxiating gases in their attacks on our positions, I have been compelled to resort to similar methods; and a detachment was organised for this purpose, which took part in the operations commencing on the 25th September for the first time. Although the enemy was known to have been prepared for such reprisals, our gas attack met with marked success, and produced a demoralising effect in some of the opposing units, of which ample evidence was forthcoming in the captured trenches.

I would again call your Lordship's attention to the work of the Royal Flying Corps. Throughout the summer, notwithstanding much unfavourable weather, the work of co-operating with the Artillery, photographing the positions of the

enemy, bombing their communications, and reconnoitring far over hostile territory has gone on unceasingly.

The volume of work performed steadily increases; the amount of flying has been more than doubled during this period. There have been more than 240 combats in the air, and in nearly every case our pilots have had to seek the enemy behind his own lines, where he is assisted by the fire of his movable anti-aircraft guns; and in spite of this they have succeeded in bringing down four of the German machines behind our trenches and at least twelve in the enemy's lines, and many more have been seen to dive to earth in a damaged condition or to have retired from the fight. On one occasion an officer of the Royal Flying Corps engaged four enemy machines and drove them off, proceeding on his reconnaissance. On another occasion two officers engaged six hostile machines and disabled at least one of them.

I am pleased to be able once more to report very favourably on the divisions of the New Armies which have arrived in this country since the date of my last report. It is evident that great trouble and much hard work have been expended on these units during their training at home.

A new Division has been sent from Canada and has joined the Army in the field. The material of which it is composed is excellent; and this Division will, I am convinced, acquit itself as well in face of the enemy as the 1st Canadian Division has already done.

I cannot conclude the account of these operations without expressing the deep admiration felt by all ranks of the Army under my command for the splendid part taken by our French Allies in the battle which opened on 25th September.

The part taken by the troops of his Majesty the King of the Belgians was very effective in holding the enemy in front of them to his positions.

September 19th.

WESTERN EUROPE.—Sir J. French reports no change as having occurred in the situation on the British Front since the 15th September, but mining activity on both sides has been considerable; and E. of Ypres there have been artillery duels. Our ally's guns have co-operated with the British Fleet in bombarding the German positions on the Belgian Coast.

The French communiqué reports chiefly artillery actions.

EASTERN EUROPE.—Vilna is reported to have fallen. The enemy having broken through the Russian line, east of the Vilna—Dvinsk railway. In the south the Austrians have had to withdraw from the Volhynia fortresses and Rovno is still in Russian hands.

September 20th.

WESTERN EUROPE.—In Artois the French artillery violently bombarded the enemy's works. Between the Aisne and the Argonne, artillery activity continued throughout the night, and also on other positions of the front. Berlin reports no important events along the land front, and also states that Westend and Middlekerk S.W. of Ostend were unsuccessfully bombarded.

EASTERN EUROPE.—Reports of operations in connection with the enemy's attacks on the Russians retreating from Vilna are conflicting: on the R. Niemen 40 miles further S. the enemy have reached Lida.

SERBIA.—On the N. bank of the Danube German artillery have shelled Serbian positions S. of the River, near Semendria E. of Belgrade.

GALLIPOLI.—Sir I. Hamilton's despatch of 26 August, 1915, is published to-day. (Page 381).

September 21st.

WESTERN EUROPE.—Increased activity on the part of the German artillery is reported on the British front: to which our heavy guns replied when part of the forest of Houthulst N.E. of Ypres was set on fire on the 20th. British airmen were engaged in 9 fights on the 19th.

The French have gained a footing in places on the right bank of the Aisne—Marne canal, and there were effective bombardments in Champagne and in the heights of the Meuse. A squadron of 19 of our ally's aeroplanes dropped 100 shells, on buildings and stationary trains at Bausdorf junction E. of Morhauge.

EASTERN EUROPE.—The Russians have fought a series of actions on the R. Vilna N.W. of Molodeczna, and by arresting the German advance from the North, they should secure the retreat of their army from Vilna.

September 22nd.

WESTERN EUROPE.—The same artillery activity was continued throughout the front.

A squadron of aeroplanes dropped 30 bombs on the Royal Palace and station of Stuttgart, the capital of Wurtemberg, 140 miles E. from Nancy. Airmen also bombarded the enemy's cantonments at Middlekerk, and a train between Bruges and Thorout, as well as the station at Conflans between Verdun and Metz.

EASTERN EUROPE.—The Russians appear to have rallied to the extent of securing their retreat from Vilna. At Molodeczna the threat to the Russian communications was on the part of the enemy's cavalry only.

MISCELLANEOUS.—Bulgaria and Greece have mobilised their armies; the intention of the former country being at present unknown.

September 23rd.

WESTERN EUROPE.—Along the front at many points, especially in the Artois district, the activity of the artillery on both sides has continued, and in the Neuville area there has been trench to trench fighting.

EASTERN EUROPE.—The enemy has completely failed to envelop and capture the Russian armies in their retreat from Vilna, which moved due East along the left bank of the River Vilia, thus foiling the enemies plan of the occupation of Molodeczna by advancing from Lida to capture the Russians retreating in a S. Easterly direction. In the north between Riga and Friedrichstadt the enemy are stated to have been driven back 8 miles from the river Dvina.

MESOPOTAMIA.—There is now an end of the long and trying heat in this region from which both British and Indian troops have alike suffered. In the 9 months campaign which commenced with the landing of the expeditionary force in November 1914, the enemy has been defeated on the Tigris, the Euphrates and on the Ahevez line: and a large area of country has been occupied.

NAVAL.—The allied squadron have been actively engaged in bombarding the Belgian Coast in conjunction with continuous artillery bombardments along the western front. The enemy having mounted heavy guns in the sand dunes, are making use of Zeebrugge as a base and supply depôt for their submarines.

September 24th.

WESTERN EUROPE.—On the British front the hostile artillery have continued to show activity, during the last 3 days: our aircraft made a successful raid on the enemy's communications near Valenciennes.

On the French front, violent cannonading has continued.

Berlin reports an increase in artillery and aerial activity.

EASTERN EUROPE.—On the river Eckau, S. of Riga, the Russians have obtained a success, capturing a village. The situation in the region of Dvinsk is stationary, but intense fighting has taken place about Smorgon S.E. of Vilna and also E. of Lida.

In the centre near Pinsk, Von Mackensen has had to withdraw his forces: whilst on the Galician border the enemies attempt against Rovno has failed and the Russians have retaken Lutsk.

GALLIPOLI.—A French semi-official report of recent operations in the Dardanelles mentions that the firing of the Turkish artillery is capricious and the material damage done is slight. The air squadron make daily reconnaissances and also have effectively bombarded the landing stages and provision depôts of the Turks on the European side opposite Nagara. The fire of the Fleet has successfully completed the airmen's attacks on the Bay of Akbachli Slimau and several Turkish vessels have been sunk: the work of the British submarines in the sea of Marmora is also stated to be "truly marvellous."

September 25th.

WESTERN EUROPE.—Great activity prevails on the front, and warships have bombarded Zeebrugge and the Belgian Coast for some hours, the Belgian batteries co-operating. French and British troops attacked N. of Arras; and in Champagne the enemy's 1st line position was stormed and taken.

Airmen have dropped bombs on the Belgian coast and also on Metz.

EASTERN EUROPE.—The Russians have retaken Vileika and captured 8 guns, and in the Lutsk region further south, they carried an enemy position taking 80 officers and 4000 men prisoners, and much war booty: they also captured 1000 prisoners on the River Stry.

September 26th.

WESTERN EUROPE.—Sir John French reports that on the 25th the enemy were attacked South of La Bassée Canal to the East of Grenay and Vermelles, when trenches on a front of over 5 miles were captured, and penetrated to a depth of 4000 yards, and the western outskirts of Hulluch, the village of Loos and Hill 70 were taken: an attack was also made on the North of the canal.

At the same time an attack near Hooze East of Ypres, on either side of the Menin Road resulted in 600 yards of the enemy's trenches being captured on the S. side; but a farm and ridge occupied on the North side were recaptured by the enemy.

A further report states that on the 26th, determined counter-attacks were made E. and N.E. of Loos, when all the ground we had captured was maintained excepting a portion North of Loos: the quarries N.W. of Hulluch which had been won and lost again on the 25th were retaken, and the prisoners now amount to 2,600. Airplanes bombed a train near Soffres, E. of Douai, and also the town of Valenciennes.

The Paris communiqué reports that all Souchez is now in French hands; and in Champagne on a front of 20 miles, the enemy has been driven back from their 1st line trenches; in this region 16,000 unwounded German prisoners have been taken, including 200 officers and 24 field guns.

Berlin states that battles in continuation of the French and British offensives which have been prepared for months, progressed without bringing the assailants to any extent nearer to their aim.

EASTERN EUROPE.—In the recent fighting the Russians announce the capture of 12,000 officers and men.

September 27th.

WESTERN EUROPE.—Sir J. French mentions that N.W. of Hulluch a number of counter-attacks have been repulsed with heavy losses to the enemy, and East of Loos our offensive progresses: 53 officers, 2,800 men, 18 guns and 32 machine guns, have altogether been taken, besides a quantity of other material.

There is no change N. of Arras, and the struggle in Champagne continues, the French troops being now on a wide front before the 2nd line of the German defences. The number of field and heavy guns captured is found to exceed 70: and of officers 300: the enemy's offensive in the Argonne has been stopped.

EASTERN EUROPE.—The Russians are slowly retiring southwards from the Vilna region.

GALLIPOLI.—Operations in the Peninsula have been confined to aircraft attacks, bombardments, and mining on either side.

September 28th.

WESTERN EUROPE.—Sir J. French reports further fighting round Loos, and the ground which the enemy retook north of Hill 70 is now held by our troops. The total number of guns captured is now found to be 40: and that of prisoners 3000.

The enemies lines taken consisted of a double front line including 2 large works, the Hohenzollern and Kaiser Wilhelm redoubts. The 2nd line ran west of Loos and our troops are now engaged with the enemies 3rd line. Our airmen bombed the railway near Bapaume and also near Acheit-le-grand.

In Artois the French gained ground East and S.W. of Souchez, and in the Argonne the enemies attacks at La fille Morte and Bolante were defeated.

Last night was comparatively calm on the rest of the French front and during the day progress East of Souchez was continued, and also in Champagne: the French are now within 2 miles of the railway running East and West which provides the enemy with lateral communications. The trenches in the Argonne were bombarded, but no infantry action on the part of the enemy was attempted.

EASTERN EUROPE.—The allies offensive in the West has to some extent relieved the pressure of the enemy on the Russian front, but he has reached a position N. of Minsk: our ally's forces are however resisting attacks at Dvinsk.

The fleet bombarded the enemies positions on the shores of the Gulf of Riga and silenced all their batteries.

Japan has agreed to supply a large quantity of war material to Russia.

September 29th.

WESTERN EUROPE.—The importance of the successes obtained by the French in Champagne, combined with that of the allied troops in Artois, is shown by the reports received in Paris: the total number of prisoners captured was over 23,000 with 79 guns, whilst the killed, wounded and prisoners exceeded the strength of 3 army corps.

The progress E. of Souchez continued to-day and Hill 140 by Vimy was reached after obstinate fighting.

In Champagne the struggle continues along the whole front, and in this sector 1000 more prisoners were taken.

EASTERN EUROPE.—The Russians are now again west of Vileika having defeated the enemy in that region. Further south the Russian army guarding the road to Kieff is menaced by a strongly reinforced offensive on the part of the enemy.

ITALY.—A fire followed by an explosion broke out on board the Italian battleship "*Benedetto Brin*" in Brindisi harbour, by which the ship and many lives including that of the Admiral were lost.

The Austrian positions on the slopes of Monte Nero above Tolmino have been successfully attacked.

MESOPOTAMIA.—General Nixon in command of the British forces in this region reports that on the 28th the operations of the 6th Division (Indian) were completely successful. The enemies position in advance of Kut-el-Almara on the Tigris about 100 miles from Baghdad was captured with many prisoners and guns: the enemy being driven in full flight towards Baghdad: the British casualties were under 500.

September 30th.

WESTERN EUROPE.—In Champagne at several points in the German 2nd defensive position W. of the Butte de Tahure and Navarin Farm a footing was gained, and further East of Tahure a portion of the German support works were carried: in this sector our air squadron bombarded the lines of communications in rear of their front, and also dropped 72 bombs on the railway station of Guignicourt. In Belgium the heavy artillery supported the action of the British Fleet against the coast batteries.

EASTERN EUROPE.—In the Riga district, N.W. of Friedrichstadt on the R. Dvina, German attacks were unsuccessful, whilst higher up the river in the Dvinsk region, the Russians claim to have repulsed the enemy: they were however driven back at Krevo S.E. of Vilna.

South of the River Pripet the enemy being reinforced, attacked on the River Styr and drove the Russians back to the right or East bank: but at Novo Aleksinetz on the Galician border our ally repulsed the enemy. Near Tarnopol the Russian general Wanoff carried some entrenchments successfully.

GALLIPOLI.—The Germans are stated to have further strengthened the Tchataldja fortifications for the protection of Constantinople.

MESOPOTAMIA.—Further details of the British victory at Kut-el-Amara on the 26th to the 29th, issued by the India office describe the Turkish force as numbering 7 to 8000 and of these 1650 were taken prisoners: our casualties included 20 officers.

October 1st.

WESTERN EUROPE.—On the 29th the enemy is reported to have made several attacks on our position N.W. of Hulluch and as a result of the severe fighting continued throughout the day, all our positions were maintained, excepting on the extreme left, where the enemy gained 150 yards of trench.

To-day no change on the British front is reported. Out of 17 air combats that have taken place, only one British machine has been worsted in the past 7 days, and railway lines have been bombed in 15 places.

In Artois progress has been made, and north of the Aisne near Sonpir there have been violent attacks on the part of the enemy which occurred also in Champagne.

A French dirigible the "Alsace" returned slightly damaged after successfully bombing the junction at Attigny and the station of Vouziers.

EASTERN EUROPE.—The outlook in Russia is undoubtedly brighter, and East of Vilna, the German advance has been stopped and ground gained. In the South Von Linsingen's new offensive makes only slow progress: the Russian general staff consider the position of their armies and the condition of their troops favourable.

THE BALKANS.—German and Austrian officers have arrived in Bulgaria with the view of taking an active part in directing the army of that country: a similar move took place in Turkey previously to their declaration of war.

On the Serbian frontier there are some 80,000 Austro-German troops, whilst there is said to be a concentration of 500,000 at some distance from the frontier.

October 2nd.

The King sent the following message to Sir John French:

"I heartily congratulate you and all ranks of my army under your command upon the success which has attended their gallant efforts since the commencement of the combined attack. I re-

"cognise that this strenuous and determined fighting is but the prelude
"to greater deeds and further victories—I trust the sick and wounded
"are doing well."

WESTERN EUROPE.—On the night of the 1st/2nd two German trenches S.W. of Fosse 8 and $1\frac{1}{2}$ miles N.W. of Hulluch were recovered from the enemy. In Artois, E. of Souchez, the French positions were violently bombarded: and in Champagne positions were won from the enemy N. of Meslin. Air squadrons bombed railway stations behind the enemy's front, notably on the Laon—Reims line: "gun-planes" having a small Hotchkiss gun fitted on the upper plane, in addition to the ordinary machine gun, have also been used.

EASTERN EUROPE.—Russia has now sent an ultimatum to Bulgaria.

In the Vileika region E. of Vilna, the German advance has been checked, but at Dvinsk a threatening movement on their part has developed.

October 3rd.

WESTERN EUROPE.—The enemy have made 4 unsuccessful attempts to recapture lost trenches between Souchez and the Givenchy wood.

The railway bridge and military buildings of Luxembourg have been attacked by an airplane squadron.

A portion of the Belgian trenches before Dixmude, have been bombarded; ground was temporarily gained, but subsequently won back from the enemy.

ITALY.—In the case of both armies rain and snow have hampered operations on the Trentino and Isonzo fronts.

MISCELLANEOUS.—The Russians report that up to the 17th Sept. 1,100,000 German and Austrian prisoners have been captured.

October 4th.

WESTERN EUROPE.—Sir John French reports that the enemy commenced a heavy bombardment, and made repeated attacks against our trenches between the quarries and the Vermulles—Hulluch road, south of La Bassée, which were repulsed with severe loss on their side; they succeeded however in recapturing the greater portion of the Hohenzollern redoubt.

The C.-in-C. in an order of this day brings to notice the plucky work of the pilots and observers of the Royal Flying Corps, performed in co-operation with the artillery, and in photography, and also by bomb attacks on the enemy's railways, carried out under extremely adverse weather conditions, entailing flights under a heavy fire at very low altitudes.

North of Arras, progress was continued in the Givenchy wood and on Hill 119: and in the Champagne a bombardment took place in the neighbourhood of the Navarin Farm. An air squadron dropped 40 bombs on a railway station near Metz, but during the day the enemy gained a footing at the junction of the Cinq Chemins near Souchez.

Berlin reports having recaptured a portion of trench 40 metres

long N.E. of Neuville: the enemy also claim to have successfully bombarded the railway station at Chalons from an airship.

EASTERN EUROPE.—It is reported that an allied army has been landed at the Greek port of Salonika.

German attacks near Dvinsk are reported from Petrograd to have been repulsed, and further south near Lake Narotch a severe action has been fought.

At Novogrodek the enemy have been thrown back to the left bank of the Niemen: and on the river Styr a tributary of the Pripet, there have been minor engagements.

October 5th.

WESTERN EUROPE.—Artillery actions have continued along the whole of the French front.

EASTERN EUROPE.—The Russian retreat has apparently been arrested and the enemies movement for enveloping the army from Vilna has failed. Berlin reports only that a 2nd Russian attack against von Hindenburg's group of armies, has been easily defeated.

October 6th.

WESTERN EUROPE.—Fresh results have been secured in Champagne: the village of Tahure being carried by assault and also the Butte de Tahure, a commanding ridge in advance, when 1000 prisoners were captured. Operations on the remainder of the front were chiefly confined to artillery duels, and in Artois, W. of Vimy some progress was made.

EASTERN EUROPE.—South of Dvinsk near Vidzy the Russians have made vigorous attacks, and apparently with success; the German reports acknowledge "initial successes" on the part of the enemy: on other parts of the front the enemy is at least held.

ITALY.—Minor engagements are reported from the Italian frontier, all of which are stated to have been favourable to our ally.

BALKANS.—Diplomatic relations between Russia and Bulgaria were broken off on the 5th inst.

The landing of the allied troops at Salonika began at 11 a.m. on the 5th inst.

October 7th.

WESTERN EUROPE.—In Champagne and in Souchez the enemy's counter-attacks failed: the Butte de Tahure (Hill 192) a most important point in the enemy's 2nd line of defence has been captured and held by the French.

EASTERN EUROPE.—The Russians announce further successes in the Dvinsk district.

GALLIPOLI.—Sir Ian Hamilton reports that there has been nothing of special importance during the past month: a gain of a little over 300 yards, on 4 miles of the Suvla front has been obtained.

BALKANS.—German heavy guns have bombarded Semendria, and during the past 10 days the enemy have carried out frequent air raids. The strength of the Austro-German armies concentrated against Serbia is said to be 400,000 men.

October, 8th.

WESTERN EUROPE.—The enemy made a violent attack on Loos and its approaches North and South, but were repelled with serious losses.

In Champagne there was further marked progress, a footing having been gained in a work known as "The Trapeze": several trenches and two redoubts were also captured. Artillery activity on both sides in other parts of the front occurred.

EASTERN EUROPE.—An action took place on the Riga—Dvinsk railway, 10 miles N.W. of Dvinsk: Petrograd reports that part of the trenches were taken by the enemy.

The Russians claim successes at many points in the Lake Narvitch district.

SERBIA.—From Nish it is officially reported that the enemy have crossed the R. Save at Yarak and at two other points: also the Danube at Belgrade fortress, at the quay, and at Ram 40 miles E. of Belgrade: there were also attacks at Semendria.

Berlin announces the crossing of the three rivers, the Drina, Save, and Danube: and Vienna reports the crossing at the Iron Gates further East, where the territories of Hungary, Rumania and Serbia join.

MISCELLANEOUS.—Relations with Bulgaria have been broken off, and the representatives of the Entente Powers left Sofia on 7th inst.

October, 9th.

WESTERN EUROPE.—Sir John French in his despatch states that since 4th October, the enemy have constantly shelled our new trenches S. of La Bassée Canal, and made bombing attacks on the southern portion of the Hohenzollern Redoubt which is held by us: our trenches have been pushed 500 to 1000 yards E. of Loos. After a heavy bombardment the enemy made an attack by successive waves of infantry, which was repulsed with heavy losses to them, ours being comparatively slight.

Paris reports attacks on the French front N. and S. of Loos which were driven back. In Champagne, the Argonne forest, and in Lorraine there were attacks and counter-attacks: and in Champagne French air squadrons dropped 100 large shells on the stations in rear of the enemies front.

EASTERN EUROPE.—The fighting for the possession of Dvinsk continues.

SERBIA.—Belgrade has been occupied and the main portions of Mackensen's 2 armies have now crossed the Danube and the Save.

NAVAL.—A British submarine has shelled and destroyed an enemy's transport in the Baltic, near the German Coast.

October, 10th.

WESTERN EUROPE.—There has been artillery activity on both sides on the crests to the East of Souchez, also attacks against a small fort in the Givenchy wood. In Belgium there were artillery actions in the outskirts of Lombaertzyde. In Champagne, progress

was again made N.E. of Tahure: in the forest of Argonne area, there was an intense bombardment on both sides.

EASTERN EUROPE.—In the Riga region there is a lull. North and South of Dvinsk over a large area fighting of a violent nature continues.

On the Galician frontier the Russians announce successes.

October, 11th.

WESTERN EUROPE.—Sir John French reports that the attack on our front S. of La Bassée Canal on the 8th October was made in great strength; the main efforts of the enemy having been against the chalk pit N. of Hill 70 and between Hulluch and the Hohenzollern Redoubt. they only succeeded in penetrating our front line at one point in the trench of the latter redoubt which is still in our hands. The French have made marked progress in the valley of Souchez and E. of the redoubt in Givenchy wood, also in Champagne N.E. of Tahure.

The total number of dead left by the enemy on the field in front of the allied lines is estimated at about 7 to 8,000 men.

EASTERN EUROPE.—The German determined attempts to envelop Dvinsk, involve heavy losses to themselves, the Russian artillery being now well supplied with ammunition. South of Dvinsk as far as the R. Pripet, there is a lull in the operations. In Bukowina there are fresh symptoms of hostile activity which has been met by the Russian cavalry in this region.

SERBIA.—German Head-quarters report the invasion of Serbia on a front of 100 miles, and an advance of 5 miles S. of Belgrade.

From Nish it is mentioned that Belgrade was evacuated to prevent its bombardment by the enemy's heavy artillery.

October, 12th.

WESTERN EUROPE.—Some enemy's trenches captured yesterday N.E. of Souchez were violently bombarded: progress in Champagne is reported.

EASTERN EUROPE.—The Russians have retaken a village N.W. of Dvinsk and have also advanced S.W. of the latter fortress.

On the R. Sereth Ivanoff's armies have won an important victory breaking through the enemies' positions on the Strypa a tributary of the Dniester and capturing 2000 prisoners.

SERBIA.—The Bulgarians have invaded Serbia on the frontier at two points N.E. and S.E. of Nish: Semendria on the Danube has been definitely reported as captured.

W. AFRICA.—A British force under Lt.-Colonel A. H. W. Haywood, R.A. captured Wumbiagas about 50 miles inland from Edia on 9 October and the enemy were on that date being pursued.

NAVAL.—British submarines have been operating in the Baltic off the island of Oland near the Swedish coast and have sunk 2 German steamers.

October, 13th.

WESTERN EUROPE.—Following on the bombardment of

yesterday the enemy attacked N.E. of Souchez and were completely repulsed.

In the Tahure area of Champagne the French in spite of heavy bombardments pushed on from trench to trench: whilst 2 separate squadrons of airplanes bombarded the station of Bazancourt, in rear of the German lines in Champagne.

EASTERN EUROPE.—The Russians have attacked vigorously between Dvinsk and Smorgon.

SERBIA.—From Nish it is reported that a Bulgarian incursion S. of Zaitchar and N. of Nish was driven off.

Greece has formally declined to assist Serbia in accordance with her alliance. The Austro-German invading armies in Serbia are estimated at 250,000 men.

MISCELLANEOUS.—The Home Office announced on 14th that a Zeppelin raid was made on the night of the 13th/14th over a portion of the London area. The material damage caused by incendiary and explosive bombs was small and no public buildings were injured.

October, 14th.

WESTERN EUROPE.—Sir John French reports that the enemy's trenches were attacked from a point 600 yards S.W. of Hulloch to the Hohenzollern Redoubt, under cover of a cloud of smoke and gas; 1000 yards of trench were gained, but owing to shell fire could not be maintained. S.W. of St. Elie trenches were captured and held, and also the main trench of the Hohenzollern Redoubt.

The French report artillery engagements on both sides in Artois, and a bombardment by the enemy with suffocating shells in Champagne.

EASTERN EUROPE.—Ivanoff in Russia has not been able to follow up his previous success in the South on the R. Strypa, and has retired again to the East bank.

SERBIA.—The French troops landed in Salonika are commanded by General Sarraill. It was stated by the Foreign Secretary that Serbia would be aided by troops of Great Britain and France, and as soon as they can be made available, also by those of Russia.

MISCELLANEOUS.—The War Office announced that a fleet of hostile airships visited the Eastern counties and a portion of the London area on the 13th/14th and dropped bombs. Anti-aircraft guns of the R.F.A. were in action and 5 airplanes of the R.F.C. went up. An airship was seen to heel over and drop to a lower altitude.

October, 15th.

WESTERN EUROPE.—Sir John French reports that the only change in the situation S. of La Bassée canal is that the position in the Hohenzollern Redoubt has been further improved, and all the ground gained on the 13th has been held. In Champagne the enemy obtained a footing on a salient point of his former trenches. In Lorraine trenches have been captured by the French: in the Vosges a very strong attack was delivered by the Germans on a front of 5

kilometres in the Hartmannsweilerkopf district, in one portion only did they meet with any success.

EASTERN EUROPE.—Hindenburg's forces are held by Russian attacks at a distance of 10 miles from Dvinsk, and at Vessolovo near the Dvinsk—Vilna railway the German positions have been penetrated.

On the 13th October in the Baltic entrance to the Sound a British submarine sank a German torpedo boat, 2 other torpedo boats and a cruiser of the enemy's flotilla then made off: on the 14th a 2nd German torpedo boat was sunk by E. 19 submarine, the flotilla having returned with reinforcements.

SERBIA.—Pozarcvatz on the Danube E. of Belgrade is reported to have fallen to the Austro-German force.

MISCELLANEOUS.—Berlin reports during the night of the 13th/14th inst. their naval airships attacked the City of London and important establishments in the vicinity as well as Ipswich, the London Docks, Hampton and Woolwich with a liberal supply of incendiary and explosive bombs and that all the airships returned undamaged.

An award of 10 Victoria Crosses is announced, 8 to Australians and one to a New Zealander: 6 of the Australian awards were for gallantry at Long Pine trenches in Gallipoli.

October, 16th.

WESTERN EUROPE.—In Lorraine and the Vosges several attacks by the enemy were repulsed; there was also fighting in Champagne and the Argonne: In the Souchez Valley an enemy's attack completely failed.

EASTERN EUROPE.—It is estimated that 2 millions of Russian refugees flood the highways from the Dvina front towards Petrograd and from further south towards Moscow: their condition is relieved by the government as far as possible: and all are confident of the future success of their armies.

BALKANS.—The German advance continues, and on the whole front S. of Belgrade the Serbians have been driven back.

October, 17th.

WESTERN EUROPE.—There have been violent artillery actions in front of Loos, in the Bois-en-Hache and to the E. of Souchez. The town of Trèves was bombarded by a squadron of French airmen, and on the 15th and 16th Mezières and other stations were bombed.

EASTERN EUROPE.—South of Riga, positions were attacked by the enemy: on the Dvinsk front there was severe fighting: the reports on either side are conflicting, but the attacks appear to be weakening. In Galicia the fighting continues with varying success, but the enemy has been unable to gain the right bank of the R. Strypa.

BALKANS.—A blockade of the Bulgarian coast in the Aegean sea, has been declared from the 16th inst.

The allied troops have left Salonica proceeding northwards.

NAVAL.—From Petrograd it is reported that British submarines have sunk 5 German transports and forced another to run ashore.

October, 18th.

WESTERN EUROPE.—Threatened German infantry attacks on a large scale were stopped by a heavy and effective curtain fire of the French artillery in the Bois-en-Hache and in the valley of Souchez. In Champagne the enemy's bombardment was very active on the Butte de Tahure and in the ravine of La Goutte. The Germans claim to have dropped 80 bombs on the fortress of Belfort.

Zeebrugge was bombarded by our warships for half an hour.

EASTERN EUROPE.—The enemy have been making strong attacks in the Riga region, but the city communications with Dvinsk along the right bank of the Divina are at present secure.

In the isolated collisions around Dvinsk the Russians are generally successful.

ITALY.—On both sides of the Tyrol frontier the artillery and infantry activity has been increasing.

GALLIPOLI.—The War Office announces that General Sir C. C. Munro, K.C.B., has been appointed to the command of the Mediterranean Expeditionary Force in succession to General Sir Ian Hamilton, G.C.B., D.S.O., who is returning to England to make a report.

BALKANS.—The Austro-German armies have advanced about 15 miles S. of Belgrade, and the Bulgarians have reached the Salonika—Nish railway at 2 points.

The Bulgarian town of Strumnitza has been captured by a Franco-Serbian force.

October, 19th.

WESTERN EUROPE.—Sir John French reports that since the 14th October there have been active artillery operations on both sides South of La Bassée Canal, and also bomb attacks in the neighbourhood of Fosse No. 8, which were repulsed. He mentions the new front as leaving the old line S.W. of Auchy-lez La Bassée, through the main trench of the Hohenzollern Redoubt to the S.W. corner of the quarries: the S.E. corner of the latter are held and the trenches run thence to the S.W. edge of Cité St. Elie to a point 500 yards W. of the N. edge of Hulluch. The line then goes to the chalk pit, 1,500 yards N. of Hill 70, along the Lens—La Bassée road, and then turns S.W. to a point E. of Loos church, thence S.E. to the N.W. slope of Hill 70, afterwards bending S.W. to a point 1,200 yards S. of Loos church and there turns due West back to the old line. The chord of the Salient thus created in the enemy's line measures 7000 yards in length along the old line, having a depth at the chalk pit N. of Hill 70 of 3,200 yards. The enemy has reinforced the front previously attacked by the British by 48 battalions, and on the 19th October an attack was made between the quarries and Hulluch which was repulsed everywhere.

The Paris communiqué reports an attack by the enemy on a front of 7 miles, E. of Reims, which was completely defeated: the attack was prepared by a prolonged artillery bombardment and

asphyxiating shells and chlorine gas were made use of: the enemy though at first partially successful were finally driven back into their own trenches.

French airmen successfully bombarded a German aviation ground N.E. of Château Salins.

EASTERN EUROPE.—The Germans have continually failed to effect a passage of the Dvina, S. of Riga.

BALKANS.—The railway communication between Salonika and Nish is interrupted.

NAVAL.—British submarines in the Baltic have torpedoed 4 more German ships.

MISCELLANEOUS.—Lt.-General Sir A. T. Murray is appointed Chief of the Imperial General Staff: the members of the Army Council cease to be termed 1st, 2nd, 3rd and 4th military members.

October, 20th.

WESTERN EUROPE.—On the British front the enemy attacked yesterday from the quarries to Hulluch, after a heavy bombardment; they were stopped by artillery fire combined with machine guns and rifles.

The Paris communiqué reports violent artillery fighting N. of Arras: and also E. of Reims.

EASTERN EUROPE.—In the Riga region stubborn fighting continues, and on the Styr river, the town of Chartoryisk on the W. bank was carried by the Russians, who took 750 prisoners and 9 guns.

GALLIPOLI.—The G.O.C. M.E.F. reports that little has taken place above ground, but mining activity on both sides has been considerable.

October, 21st.

WESTERN EUROPE.—The attack on Reims which commenced yesterday was renewed, heralded by clouds of poisonous gases, but the enemy were driven back by artillery and machine gun fire after three attempts.

EASTERN EUROPE.—The Germans claim a success in the Riga region and have taken 1700 prisoners.

In the centre of the front, and E. of Baranovitchi the Russians have carried positions and captured 3,500 prisoners.

ITALY.—The official communiqué mentions further successes for the Italian offensive in Tirol and Trentino.

BALKANS.—The railway between Uskub and Nish has been cut in the neighbourhood of Varnia by the Bulgarians, who are now in possession of 20 miles of the line.

October, 22nd.

WESTERN.—Unsuccessful attacks in Artois on the part of the enemy were made. Berlin reports no important events to record.

EASTERN EUROPE.—The Germans are now within 10 miles of Riga: and on the River Styr they have been strongly reinforced; in the Tarnopol region the Russians claim a considerable success.

BALKANS.—Bulgaria: On the 21st a bombardment of the coast from Dedeagatch to Porto Lagos, a distance of 38 miles, was begun by the allied fleets; the former place has a poor harbour and is said to be mostly inhabited by Greeks.

SERBIA.—The Bulgarians have occupied Kumanovo on the railway 30 miles N. of Uskub: and the Austro-German invasion from the North is proceeding though slowly.

October, 23rd.

WESTERN EUROPE.—Hostile groups attempting to advance from their trenches in Bois-en-Hache and near the Givenchy Redoubt and also in Champagne have been driven back.

EASTERN EUROPE.—On the 22nd a landing party from the Russian Fleet drove off a German detachment protecting the front near Domeness on the Courland coast, and afterwards re-embarked.

The Russian general staff consider that the crisis on their front has passed away favourably to themselves.

ITALY.—General Cadorna reports progress in every important sector along the front, whilst a great effort is to be made on the Carso plateau.

BALKANS.—The Bulgarians have captured Uskub on the Nish—Salonika line: whilst the allied troops have reached Krivolak. The Russian fleet have shelled Varna and Burgas on the Black Sea.

October, 24th.

WESTERN EUROPE.—In Champagne an important success has been gained: "The Courtine" a work included in a salient occupied by the Germans was captured, comprising a front of 1300 yards and a depth of 270; portions however of some of the trenches in the centre were afterwards re-occupied by the enemy.

NAVAL.—A British submarine near Libau sank a German cruiser of the "*Prinz Adalbert*" type (11,000 tons).

ITALY.—Venice was attacked by aircraft at 10 p.m. on the 24th, and again at 8.40 a.m.: slight material damage was only done and no casualties.

(To be continued).



PRÉCIS OF MILITÄR WOCHENBLATT.

BY CAPTAIN A. E. A. DOBSON, R.A.

No. 137/138. 5th August, 1915.

Pryasnysz.

The Russian system of trenches. Gen. v Gallwitz plan of attack.
13th July. The moral effect of the German artillery fire.
14th July. Capture of Pryasnysz.

No. 140/141. 10th August, 1915.

The Pripet Swamps, from strategical and tactical points of view.

Russia's strategical western frontier. Polesina and the Pripet with its tributaries. Extent of the swamps. Climate, population and railways in the district.

Swamp operations—extracts from an article in the "Russki Invalid."

No. 152/153. 24th August, 1915.

Kovno.

A short account of its capture.

The Russian soldier of former campaigns and 1914-15.

A criticism of the Russian soldier since the time of Suworow.

The number of officers killed as announced in Prussian (284-310), Bavarian (206-215), Saxon (174-187), Wurtemberg (228-248), and Naval lists (42-44 amounts to 776.

No. 160. 4th September, 1915.

The French soldier of 1870-1 and of 1914-15.

The reasons for the French defeat in 1870-71, and a consideration whether the lack of offensive noticeable in 1870-1 will lead also to their defeat in 1914-15.

No. 163. 11th September, 1915.

Modern Hand Grenades.

(An article written before the war).

First used in 1536 (Siege of Arles). Origin of "Grenadiers." Use in Russo-Japanese war. Trials carried out in Copenhagen by the Danish inventor—Aasen.

- (i). Volleys of rifle grenades were fired by seven men under cover against 80 double figure wooden targets, distributed under cover, over an area of 1075 square yards. At the first volley—93 hits on 43 targets. After the 3rd volley—168 hits on 72 targets. Distance—330 to 440 yards.

"Rifle" grenade—total weight about 1·2 lbs, containing 72 1·4 dr. bullets, and a charge of 2·5 oz. Fired from an ordinary service rifle for ranges up to 440 yards, with an area of at least 48 to 60 sq. yds.

No. 9. Vol. XLII.

covered by the bullets. Explosion of the grenade takes place immediately on impact, and before it has time to penetrate the ground.

The "howitzer" grenade weighs $2\frac{1}{8}$ lbs, and contains 215 bullets and an explosive charge of 7 ozs. Can be thrown by hand up to 50 yards, or by the "howitzer" up to 330 yards. The "howitzer" is about $26\frac{1}{2}$ lbs in weight, and can be carried like a rifle. The bullets of this grenade cover an area of at least 100 square yards, and the effect on explosion is to the front and sideways, but not to the rear. The grenade is constructed so that it cannot burst until at least 10 yards towards the target has been covered.

Trials: Volleys were fired from 7 howitzers against 80 figure targets distributed over an area of 1075 square yards, at a range between 310 to 345 yards. After the 4th volley—143 hits on 68 targets.

The "hand" grenade weighs $2\frac{1}{8}$ lbs, and contains 190 1·35 dr. bullets and an explosive charge of 3·9 ozs. All-round effect on explosion. A volley of 7 fired against the above target produced 119 hits on 33 targets. The "mine" grenade weighs $8\frac{4}{5}$ lbs, and contains 400 1·9 dr. bullets and an explosive charge of 7 ozs. The bullets cover an area of at least 960 square yards.

These grenades are buried about $1\frac{1}{2}$ ft. below the ground, together with their electrical connections. When fired, they rise and burst about $2\frac{1}{2}$ ft. above the ground, sending their bullets in every direction parallel to the ground. At a range of 10 yards, the bullets will penetrate at least 4 inches of wood, and are effective up to 50 yards. A length of $2\frac{1}{2}$ miles of these grenades can be laid by 100 men in less than two hours.

Trials.—Three grenades were buried at the corners of a triangle, the sides of which were 33 yards. The triangle was placed in the midst of 145 double figure wooden targets distributed over an area of 3,200 sq. yards. On firing, 700 hits were obtained on 120 targets.

No. 164. 14th September, 1915-

Doctors and losses.

Some percentages are given of the number of men killed, died of wounds, treated by the field ambulances, hospitals, and casualties from artillery fire in various campaigns. Russo-Japanese 1904-5, Russo-Turkish 1877-78, 1870-1 (German), 1866, Crimea 1853-4 (Russian).

The figures show that with the advance of science, mortality is decreasing.

No. 167/168. 21st September, 1915.

The following were captured at Novo Georgievsk:—

- 1,640 guns.
- 23,219 rifles.
- 103 machine guns.
- 160,000 rounds of gun ammunition.
- 7,098,000 rounds of S.A. ammunition.

The guns captured at Kovno amounted to 1,301.

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